

Nordic Ecolabelling for
**Outdoor furniture, outdoor fixtures, and
playground equipment**



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This document is a translation of an original in Danish. In case of dispute, the original document should be taken as authoritative.

Addresses

In 1989, the Nordic Council of Ministers decided to introduce a voluntary official ecolabel, the Nordic Ecolabel. These organisations/companies operate the Nordic Swan Ecolabelling system on behalf of their own country's government. For more information, see the websites:

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What is Nordic Swan Ecolabelled outdoor furniture, outdoor fixtures, and playground equipment?

The purpose of the criteria is to secure low environmental impact in the production and use of outdoor furniture, outdoor fixtures and playground equipment. The environmental requirements have been drawn up from a life cycle perspective and have been formulated to ensure minimum environmental impact during production, use and in the waste phase. Requirements have accordingly primarily been imposed with respect to the following:

- a) Wood raw materials from sustainable forestry operations.
- b) The use of recycled plastic and metal raw materials and a design that permits the re-use of plastic and metal.
- c) The use of chemicals with a lower environmental impact
- d) Good performance properties (safety, strength and stability)

The Nordic Swan Ecolabelled product must be accompanied by information on how to maintain the product and recommended maintenance products. This information must also include instructions on how to proceed when the product comes to the end of its useful life.

Why choose the Nordic Swan Ecolabel?

- The licensee may use the Nordic Ecolabel trademark for marketing. The Nordic Swan Ecolabel is a very well-known and well-reputed trademark in the Nordic region.
- Nordic Ecolabelling represents a simple and cost-effective way of communicating a company's environmental work and commitment to its customers and suppliers.
- Embracing environmentally friendly production will also prepare the company for the introduction of mandatory environmental requirements by the authorities.
- Environmental issues are complex and learning about specific problems can be time-consuming. Nordic Ecolabelling can be used as a guide in this process.
- The Nordic Ecolabel criteria contain more than environmental requirements, they also comprise quality requirements, since quality and caring for the environment often go hand in hand. This means that the Nordic Swan Ecolabel can also be viewed as a mark of quality.

What products are eligible for Nordic Ecolabel?

Ecolabelling within this product group encompasses outdoor furniture (garden furniture), outdoor fixtures and playground and park equipment. Outdoor furniture means chairs, tables, armchairs, benches and sofas that are moveable.

Playground equipment includes swings, slides, playhouses and other outdoor playing equipment. The product group encompasses playground equipment for domestic use and for public playgrounds – both conventional and natural playgrounds.

Outdoor fixtures includes for example wood/bike/bus/tool sheds, fences/railings, flower boxes, flagpoles, waste baskets and outdoor left outdoors on a permanent basis.

The product group does not include outdoor furniture containing padding or textiles. Nor does it encompass hanging benches and hammocks*. Safety surfaces for playground equipment, cycles and toys for outdoor use are not encompassed by the product.

How to apply

Application and costs

For information about the application process and fees for this product group, please refer to the respective national web site. For addresses see first in this document.

What is required?

The application must consist of an application form/web form and documentation showing that the requirements are fulfilled.

Each requirement is marked with the letter R and a number. All requirements must be fulfilled to be awarded a licence.

The text describes how the applicant shall demonstrate fulfilment of each requirement. There are also icons in the text to make this clearer. These icons are:

☒ Enclose

📍 The requirement checked on site

All information submitted to Nordic Ecolabelling is treated confidentially. Suppliers can send documentation directly to Nordic Ecolabelling, and this will also be treated confidentially.

License validity

The ecolabel licence is valid providing the criteria are fulfilled and until the criteria expire. The validity period of the criteria may be extended or adjusted, in which case the licence is automatically extended, and the licensee informed.

Revised criteria shall be published at least one year prior to the expiry of the present criteria. The licensee is then offered the opportunity to renew their licence.

On-site inspection

In connection with handling of the application, Nordic Ecolabelling normally performs an on-site inspection to ensure adherence to the requirements.

For such an inspection, data used for calculations, original copies of submitted certificates, test records, purchase statistics, and similar documents that support the application must be available for examination.

Queries

Please contact Nordic Ecolabelling if you have any queries or require further information. See addresses first in the document. Further information and assistance (such as calculation sheets or electronic application help) may be available. Visit the relevant national website for further information.

What are the requirements for the awarding of a Nordic Swan Ecolabel?

All requirements must be fulfilled in order for a Nordic Swan Ecolabel licence to be awarded.

A licence valid throughout the Nordic region is given for the product group. The following documents must therefore be submitted to the application:

- Instructions for use in the language in question,
- Documentation evidencing compliance with national regulations and of membership of system for recycling products and packaging.

1 Materials

Where multiple product types are produced with different compositions of materials, the materials in the products may be approved based on a producer-specific list of materials. Nevertheless, a calculation must be performed for each product to ensure that all requirements are fulfilled.

Some requirements may be documented on an annual basis at factory level.

For example, an outdoor furniture manufacturer may document the requirement applicable to wood from certified forestry operations (R4) based on the proportional content based on one year's consumption for the Nordic Swan Ecolabel product/products. The following requirements may be documented on an annual basis: R2, R4, R8, R9, R10, R11 and R31.

Table 1: Overview of materials and the requirements for which documentation must be provided

Material	Level	Requirement	Form	Quantity	Relevant
Wood	General	R2 – R4	2a-2c		Yes • No •
Wood-based panels	General (more than 5% by weight)	R5 – R8	3		Yes • No •
	More than 10% by weight	R9 – R11	2a-2c and 5		Yes • No •
Highpressure laminate (HPL) panels	More than 10% by weight HPL in the ecolabelled product	R12			Yes • No •
	More than 10% by weight paper/pulp in the panel	R13 and R14	2d		Yes • No •
	More than 30% by weight paper/pulp in the panel	R15	2e		Yes • No •
	More than 10% by weight HPL in the ecolabelled product	R16 and R17			Yes • No •
Chemical products	General	R18 – R22	3		Yes • No •
Wood preservative	General	R23	3		Yes • No •
	Not outdoors permanently	R24	3		Yes • No •
	Outdoors permanently	R25	3		Yes • No •
Surface treatment of wood and wood-based panels	General	R26	3		Yes • No •
Maintenance products for wood	General	R27	3		Yes • No •
Metal	General	R28	6		Yes • No •
	More than 50% by weight	R29	6		Yes • No •
Surface treatment of metals	General	R30 – R31	3 and 6		Yes • No •
Plastic	General	R32 – R35	3 and 7		Yes • No •
	More than 10% by weight	R36	7		Yes • No •
Other requirements	General	R37 - R49	8		

R1 The composition of the outdoor furniture and playground equipment

The applicant must describe the materials contained in the product.

Enter the weight in kilograms for each material. Small details like screws, brackets and hinges do not weigh. Provide an overview of the different materials and their suppliers. Use Table 1 to obtain an overview of what requirements are appropriate.

Materials in respect of which no requirements are imposed (e.g., composite materials, stone, and ceramics) must not make up more than 5% by weight of the product. In total, the product may consist of maximum 10% by weight of materials for which no requirements are imposed.

- ☒ Material composition of the product with a specification of ingoing materials. Small parts such as screws, fittings and hinges need not be weighed. A specification must be provided of the proportion (%) that the individual materials make-up of the total weight of the product (materials must be specified in terms of weight and % by weight). Complete table 1 and form 1 in appendix 2, based on information on material combinations.

2 Environmental requirements

2.1 Solid wood, willow, and bamboo

The requirements encompass wood, willow, and bamboo present in a product, excluding small wooden parts such as wedges and the like.

For solid wood, veneer, willow, and bamboo the applicant may choose either to comply with and document requirements R2 and R4 or select the revised requirements for wood raw materials (both A and B) in form 8. It is not possible to mix requirements R2 and R4 with the revised requirements A and B in form 8.

Requirements R3 Biocides are applicable regardless of the requirements (R2 and R4 or form 8) selected.

R2 Traceability/wood raw materials

This requirement concerns all product parts containing wood, willow or bamboo. The applicant must state the type of raw material (for example pine or bamboo), Latin name, quantity, geographic origin (country/state and region/provins) and suppliers for the wood, willow, or bamboo raw materials.

The licence holder must have written procedures covering sustainable wood supplies and a documented system for tracing the origin of raw materials. The Nordic Ecolabel may request further documentation in the event of uncertainty about the origin of the raw material

Wood willow and bamboo must not originate in:

- Protected areas or areas treated by means of an official procedure with a view to achieving protected status.
- Areas in which rights of title or of use are unresolved.
- Unlawfully harvested wood and fibre raw materials.
- Genetically modified trees and plants.

- Name (in Latin and in a Nordic language), quantity and geographical origin (country/state and region/province/municipality) of the wood and fibre raw materials used.
- Form 2a is to be filled in by the wood supplier and form 2b by the producer/applicant. Nordic Ecolabelling may request further documentation in the event of uncertainty about the origin of the raw material.
- A written procedure describing how the requirement is met. The procedures must include an updated list of all suppliers of wood and fibre raw materials used in the product. Form 2b is to be filled in by the producer/applicant.

R3 Solid wood - Biocides

After felling wood must not be treated with insecticides classified by WHO as type 1A and type 1B.

This requirement applies to the treatment of timber after felling.

WHO classification: An overview can be found at: http://www.who.int/ipcs/publications/pesticides_hazard/en, "The WHO recommended classification of pesticides by hazard and guidelines to classification 2009" or by contacting one of the secretariats.

- Information from the supplier of the timber on the insecticides that are used and declaration in accordance with Form 2a for each individual product.

R4 Wood from certified forestry

The requirement encompasses solid wood and veneer. It does not apply to willow and bamboo.

70% by weight on an annual basis of all purchased solid wood and veneer in the product to which the application for a Nordic Swan Ecolabel applies must derive from certified forestry. Certification must be performed by a third party in accordance with a current forestry standard that fulfils the requirements applicable to standards and certification system, cf. Form 2c.

- Specification of the proportion of incoming wood from certified forestry operations on an annual basis and the basis for calculation. Producer may use Form 2c.
- Description of the system used to secure the traceability of the wood.
- Copy of the certificate(s) duly signed and approved by a certification body. Nordic Ecolabelling may request additional documentation for the purpose of assessing whether the requirements applicable to standards, certification systems and certified proportion have been fulfilled. This might, for example, include a copy of the approval report drafted by the certification body, a copy of the forestry standard including the name, address, and telephone number of the organisation responsible for drafting the standard and reference to persons representing parties and interest groupings invited to participate in the development of the forestry standard.

2.2 Wood, willow and bamboo panels

The requirements of this chapter include panels of solid wood, laminating wood, solid wood panels (plywood and parallel laminated veneer), wood-based panels and HPL panels (high pressure laminate).

Wood-based panels include chipboard, fibreboard, MDF panels, OSB and veneer boards (plywood and parallel laminated veneer). The requirement also encompasses equivalent products made of willow and bamboo.

Other equivalent raw materials may be included by submitting a request to Nordic Ecolabelling. The requirement applies only to panels present in the products in quantities in excess of 5% by weight.

For panels of solid wood, veneer, bamboo or wood fiber, the applicant may choose either to comply with and document requirements R8 and R9 or select the revised requirements for wood raw materials (both A and B) in form 9. It is not possible to mix requirements R8 and R9 with the revised requirements A and B of form 9.

R5 Ecolabelled panels

If the panel is Ecolabelled, the requirements of Chapter 2.2 (R6 – R11) will have been fulfilled.

- If the panel is Ecolabelled, the panel type and manufacturer and licence number must be specified.

R6 Chemical product and additives in the panel (e.g. surface treatment)

Chemical products for the surface treatment of wood must comply with the following requirements and the requirements of Chapter 2.3 (R18–R22). The requirement relates to the chemical products and their chemical composition at the time at which they are added to the panel.

However, this requirement includes an exemption from R19 as regards classification as an environmental hazard (N with R50, R50/53 or R51/53 and/or R59). The total quantity of ingoing chemical substances classified by the chemical supplier as environmentally harmful in accordance with the Dangerous Substances Directive 67/548/EEC as adapted to REACH in accordance with Directive 2006/121/EC and the Dangerous Preparations Directive 1999/45/EC all with subsequent amendments and adaptations must be < 0.5g/kg of panel. The requirement applies to the chemical products with their chemical composition at the time they are added to the panel material. Ammonia in excess of 24% is not included in this quantity.

- ☒ For each chemical product in the panel documentation must be submitted by the chemical supplier in accordance with Form 3. The panel manufacturer must account for the total quantity of ingoing substances as g/kg of panel material classified by the chemical supplier as environmentally harmful.

R7 Formaldehyde in wood based panels

In the case of panels that contain formaldehyde-based additives or where the surface treatment includes formaldehyde one of the following two requirements must be fulfilled:

1. The average content of free formaldehyde must not exceed 5 mg formaldehyde/100 g dry product for MDF panels and 4 mg/100 g dry product for all other panels as determined by the current version of EN 120 (the perforator method) of similar methods approved by the Nordic Ecolabel (see point 3, Appendix 1).

The requirements apply to wood panels with a moisture content of H = 6.5%.

If the panels have a different moisture content within the range 3 – 10%, analysed perforator value must be multiplied by Factor F derived from the following formulae:

For chipboard panels: $F = -0.133 H + 1.86$

For MDF: $F = -0,121 H + 1.78$.

2. Average emissions of formaldehyde must not exceed 0.124 mg/m³ air for MDF panels and 0.07 mg/m³ air for all other panels as determined by the current version of EN 717-1 of similar methods approved by the Nordic Ecolabel (specified in Appendix 1).

- ☒ Analysis report describing measurement methods, measurement results and measurement frequency. It shall clearly be stated which method is used, who has performed the analyses and be documented that the test institution is an independent third party.

R8 Uncertified wood raw material in the panel

This requirement concerns all panels containing wood, willow, bamboo, or fibre products thereof.

The licence holder must have written procedures covering sustainable wood and fibre raw material supplies and a documented system for tracing the origin of fibre raw materials.

Wood and fibre raw materials must not originate in:

- Protected areas or areas treated by means of an official procedure with a view to achieving protected status.
- Areas in which rights of title or of use are unresolved.
- Unlawfully harvested wood and fibre raw materials.
- Genetically modified trees and plants.

The licence holder must have written procedures covering sustainable wood supplies and a documented system for tracing the origin of raw materials. The Nordic Ecolabel may request further documentation in the event of uncertainty about the origin of the raw material.

Sawdust/wood chips and/or waste wood and/or untreated demolition wood and/or recycled fibres from other industrial activities, such as sawmills, are covered by this requirement but must meet only the last part of the documentation requirement (written procedures).

- ☒ Name (in Latin and in a Nordic language), quantity and geographical origin (country/state and region/province/municipality) of the wood and fibre raw materials used. This does not include sawdust/wood chips and/or waste wood and/or untreated demolition wood and/or recycled fibres from other industrial activities, such as sawmill. Nordic Ecolabelling may request further documentation in the event of uncertainty about the origin of the raw material. Form 2a is to be filled in by the wood supplier and form 2b by the producer/applicant
- ☒ A written procedure describing how the requirement is met. Sawdust/wood chips and/or waste wood and/or untreated demolition wood and/or recycled fibres from other industrial activities, such as sawmill are included in this criteria.

2.2.1 By more than 10% by weight wood-based panel

R9 Certified wood raw material in the panel

The requirement does not encompass wood fibre panels.

The requirement includes solid wood, laminated wood and veneer. Minimum weight 50% of all purchased raw wood material to the panel must annually come from certified forests.

The requirement can be documented as wood raw material purchased annually and shall be calculated for the different woods used.

Certification must be performed by third party pursuant to applicable forestry standards which meets the standard and certification see Form 2c.

Willow, bamboo, sawdust, waste wood, non-demolition wood and recycled fibres from other industrial production is not covered by this requirement.

- ☒ Proportion (%) of certified wood used in the applicant's Nordic Swan Ecolabelled production on an annual basis. Form 2b is to be filled in by the producer and information from form 2a can be used. Form 2a may be used by suppliers.
- ☒ Description of the system used to ensure traceability of the wood. Form 2b may be used.
- ☒ Copy of the certificate, which is signed and approved by a certifying body. The ecolabelling organization may collect additional evidence to assess the requirements for standard certification system and that certified percentage is met. E.g., copy of the certification approval report, copy of the standard of forest including name, address and telephone number of the organization which has designed the standard, as well as references to persons who represent parties and interest groups who are invited to participate in the development of forestry standard.

R10 Energy consumption and raw material origins

The requirement applies to all panels as described in Chapter 2.2 Wood, willow, and bamboo panels.

The requirement consists of two parts. One part consists of a formula where a specific point score must be achieved by dividing the various environmental

parameters by a factor and adding them together. In order to fulfil the requirement, the score for the panel must exceed a threshold value. The other part is specific requirements/threshold values imposed on the parameters in the formula.

Energy consumed in the production of the wood-based panel must be less than or equal to the requirements stated in the following table for electricity and fuel consumption.

Table 2

Environment parameter	Max requirement
A = Wood raw material from certified sustainable forestry (%)	
B = Proportion of recycled raw material (%)	
C = Proportion of renewable fuel (%)	
D = Electricity consumption (kWh/m ²)	Max 1 kWh/kg
E = Fuel consumption (kWh/m ²)	Max 3,4 kWh/kg

Overall score P calculated with environmental parameters from the table above must be calculated with the formula below.

$$P = \frac{A}{25} + \frac{B}{25} + \frac{C}{25} + \left(4 - \frac{D}{0,25}\right) + \left(4 - \frac{E}{0,85}\right)$$

For requirement is to score:

P must be at least 9.5 in the case of chipboard

P must be at least 8.0 in the case of wood fibre/veneer and laminated panels.

Origin of raw materials

In the case of building panels made of wood, the use of wood from certified sustainable forestry operations is rewarded. The proportion of wood from certified sustainable forestry operations is calculated as an annual average. Secondary products such as wood chips and sawdust from other production processes can also be included in the certified part if documented. The same fibre fraction can calculate certified and reused.

Panels which use secondary products or inorganic materials are rewarded if the raw materials are reused. Reused materials are defined as production waste from other industrial production or reused materials from used products (post-consumer).

The raw material can also be without any documentation proving either certified or reused origin. The calculation of portion of certified or reused materials are calculated on the basis of the total amount of raw materials.

Energy consumption (electricity and fuel)

The requirement rewards low energy consumption and the use of renewable fuels. Renewable fuels are defined as fuel that is not fossil fuel (peat is defined as fossil fuel).

Energy consumption is calculated as an annual average.

Energy consumption calculated as kWh/kg of panel must encompass the primary panel production and the production of the ingoing raw materials in question. Primary raw materials are raw materials present in quantities in excess of 5% by weight of the finished panel. Energy consumption in extracting the raw materials is not included.

In the case of panel production, energy calculations must be based on data from and including raw material processing (ingoing conveyor belt on the production line) up to and including the finished product before surface treatment, where applicable. Energy consumed during surface treatment must not be included.

As regards the production of chemical products, e.g., adhesives, the energy account must be based on production. The energy content of raw materials must not be included. In exceptional cases, a standard value for glue of 15 MJ/kg (solution in use) may be used, divided by 12 MJ/kg for fuel and 3 MJ/kg for purchased electricity (4:1).

Nordic Ecolabelling has chosen the unit of kWh per kg or m³, but conversion to MJ (1kWh=3.6MJ) may also be used.

The energy content of various fuels can be found in Form 5.

If the manufacturer has a surplus of energy and sells this energy in the form of electricity, steam or heat, the quantity sold must be subtracted from the fuel consumption figure. Only fuel used in connection with building panel production must be included.

Electricity consumption is electricity purchased from an external supplier.

- Submit the calculation of P in accordance with the above formula.
- Wood raw materials are documented as shown in R9.
- Specify the proportion of recycled raw materials in the building panel and the type of raw materials in question.
- Specify the type of fuel used in the production of the panel over the last year and the fuel types are renewable. Form 5 contains standard values for various types of fuel. Specify the amount of electricity used and the number of building panels (kg or m³), produced in the last year.

R11 Emissions to water

In the case of panel material produced using wet processes (e.g., MDF) COD emissions to water ≤ 20 g COD/kg product (unfiltered sample).

- Methods of analysis see Appendix 1. Sampling programme for wastewater emissions, including measurement methods, measurement results for the last 12 months and measurement frequency.

2.3 Highpressure laminate (HPL) panels

The following requirements include HPL panels when the high-pressure laminate material represents more than 10% by weight of the finished ecolabelled product. The requirements include only the high-pressure laminate. Any wood-based panel is covered by the requirements of section 2.2.

R12 Ecolabelled product

If the product is Ecolabelled, all requirements in section 2.3 (R13, R14, R15, R16 and R17) are automatically fulfilled.

- If the product is Ecolabelled, the product type and manufacturer and licence number must be specified.

R13 Wood fibre and waste wood in paper, cardboard and pulp

The requirement includes raw materials purchased as wood fibres in paper, cardboard, and pulp, that individually represents more than 10 percent by weight of the finished panel. The requirement does not apply paper labels attached to the product. One of the three following requirements opportunities must be met.

Nordic Swan Ecolabelled paper products as well as pulp and paper controlled under the existing Nordic Ecolabel basic module for paper, is automatically approved in this requirement.

Annually, at least:

1. 30% of the fibre raw material in paper, cardboard or pulp must come from forest areas in which operation has been certified under the forestry standard and certification system stated in Appendix 4c or which is certified as organically cultivated or where cultivation is in the process of being converted to organic production,

or

2. 70% of the fibre raw material in paper, cardboard or pulp must be recycled fibre or bi products such as shavings or sawdust,

or

3. a combination of 1 and 2. If the fibre raw material in paper, cardboard or pulp consists of less than 70% recycled fibre, the proportion of fibre raw material from certified areas must be calculated according to the following formula:

Requirement for proportion of fibre raw material from certified areas in paper, cardboard, or pulp (Y):

$$Y (\%) \geq 30 - 0.4x$$

where x = proportion of recycled fibre or bi products such as shavings and sawdust.

- The declaration and any calculations from the supplier of the paper, cardboard, or pulp that the requirement has been satisfied. The declaration must contain the name of the paper, cardboard, or pulp. Appendix 2d may be used.
- Where points 1 or 3 apply, the paper, cardboard or pulp manufacturer must send a copy of the relevant forestry certificate which complies with the guidelines for forest certification and organic cultivation, as described in Appendix 2c.
- By using the Nordic Swan Ecolabelled paper, cardboard or pulp submit trade name and license number of the product. When using products controlled by the existing Nordic Swan Ecolabel paper basic module the producer, production plant, name of mass or paper quality and grammage shall be described.

R14 Emissions of COD from paper and cardboard production

The total emissions of acid-consuming organic material (COD - chemical oxygen demand) to water must be less than the specified COD value in Table 3 for the paper or cardboard used (for unfiltered sample). Each type of pulp has its own level in the requirement. The COD emission from pulp production must be included in the total COD calculation for the paper or cardboard used.

COD emissions are thus calculated by adding the emissions COD mass kg/ADT (weighted mean of incoming pulps) + COD emission paper machine kg/t.

Nordic Swan Ecolabelled paper products as well as pulp and paper controlled under the existing Nordic Ecolabel basic module for paper, is automatically approved in this requirement.

Table 3 COD requirement levels for different pulp and paper types

Pulp type	Total COD level kg/ADt for pulp and paper
Bleached chemical pulp (sulphate and other chemical pulps except sulphite pulp)	22.0
Bleached chemical pulp (sulphite pulp)	29.0
Unbleached chemical pulp	14.0
CTMP pulp	19.0
TMP/Groundwood pulp	7.0
Recycled fibre pulp	4.0

- ☒ Submit a description of the sampling programme, including measurement methods, measurement results from previous 12 months and measurement frequency, see also Section 1 of Appendix 1.
- ☒ By using the Nordic Swan Ecolabelled paper, cardboard or pulp submit trade name and license number of the product. When using products controlled by the existing Nordic Ecolabel paper basic module the producer, production plant, name of mass or paper quality and grammage shall be described.

R15 Energy requirements for paper and pulp production

The requirement covers paper and pulp which individually are present at more than 30% by weight in the finished panel.

Nordic Swan Ecolabelled paper products as well as pulp and paper controlled under the existing Nordic Ecolabel basic module for paper, is automatically approved in this requirement.

The following requirements must be satisfied for paper or pulp:

$$P_{\text{electricity(total)}} < 1.25$$

$$P_{\text{fuel(total)}} < 1.25$$

P stands for energy point for paper/pulp production. In $P_{\text{electricity(total)}}$ and $P_{\text{fuel(total)}}$, energy points are included from both paper production and the pulps used in the paper. See further explanation in Appendix 2e.

- ☒ The pulp and paper manufacturer must submit a calculation according to Appendix 2e which shows that the point limits are being satisfied. The calculation sheet developed by Nordic Ecolabelling must be used for the calculation.
- ☒ By using the Nordic Swan Ecolabelled paper, cardboard or pulp submit trade name and license number of the product. When using products controlled by the existing Nordic Ecolabel paper basic module the producer, production plant, name of mass or paper quality and grammage shall be described.

R16 Energy requirements for HPL panel production

The requirement covers the applied energy for production of the panel and may be documented either for the ecolabelled panel production or for the company's total annual production of HPL panels.

HPL panels ≤ 2 mm thin:

No more than 18 MJ/kg panel may be used for producing the panel.

HPL panels ≤ 2 mm thick:

No more than 14 MJ/kg panel may be used for producing the panel.

The requirement does not include extraction of resources or production of incoming raw materials. Paper has its own energy requirements in R15. Self-produced energy and resold surplus energy should be stated but will not count as applied energy in the calculation.

- ☒ A calculation should be submitted documenting compliance with the requirement. The calculation must contain information about quantity of produced panels, subdivided into thick and thin, applied electricity and fuel, and which fuel sources are being used.

R17 Emissions from HPL production

In the case of production in countries where the mandatory national requirements are less stringent than the emission levels in this requirement, it must be documented that the following emissions levels have not been exceeded.

The requirement relates to panels in which the content of HPL (High Pressure Laminate) accounts for more than 10% by weight of the panel.

The following limit values for emissions to air at the workplace may not be exceeded during production of HPL (High Pressure Laminate):

The limit value is expressed in relation to a reference period of 8 hours' time-weighted average (TWA):

Limit value for formaldehyde cas. no. 50-00-0: 0.5 ppm or 0.6 mg/m³

Limit value for phenol cas. no. 108-95-2: 2 ppm or 8 mg/m³

The limit value is expressed in relation to a short-term value of max. 15 min.:

Limit value for formaldehyde cas. no. 50-00-0: 1.0 ppm or 1.2 mg/m³

Limit value for phenol cas. no. 108-95-2: 4 ppm or 16 mg/m³

- Air measurements for phenol and formaldehyde for the past 12 months, containing a description of the sampling programme, including measurement methods and measurement frequency. For analysis methods, see Appendix 1. **Or**
- Description of mandatory national regulatory requirements, showing that the requirement automatically is followed.

2.4 Chemical products and materials

Requirements encompass all chemical products added to the product or used in the factory/production site or by subcontractors, including surface treatment. The requirements apply to products such as glue, varnish, stains, filler, primer, oil, soap, sealant, joint filler, colour products, binding agents, pigments, bleaching chemicals and the like. Auxiliary substances such as lubricants and cleaning products are not encompassed by the requirements.

Ingoing substances are defined as, unless stated otherwise, all substances in the product – including additives (e.g., preservatives or stabilizers) in the raw materials, but not residuals from the production, incl. the production of raw materials.

Residuals from production, incl. production of raw materials are defined as residuals, pollutants and contaminants derived from the production, incl. production of the raw materials, which are present in the final product in amounts less than 100 ppm (0.0100 w/w %, 100 mg/kg), but not substances added to the raw materials or product intentionally and with a purpose – regardless of amount. Residuals in the raw materials above 1.0 % are regarded as ingoing substances. Known substances released from ingoing substances are also regarded as ingoing substances.

Metals and foil of metal (metalizing) is exempted from R18-R22.

Plastic is exempted from R18-R22 but excipient in plastic shall fulfil R21.

R18 Ecolabelled chemical products

For chemical products that are Nordic Swan Ecolabelled the requirements R19, R20, R21 and R22 can be skipped.

- Name, producer and licence number of the chemical product.

R19 Classification of chemical products

Chemical products used in production must not be classified in accordance with the table below.

Exceptions:

- In the case of additives in wood-based panels, R6 give an exemption from the requirement concerning environmental hazard. See the specific requirements for building panels in R6. Exemptions are also given for classification H351 (category 2) for classified adhesives that contain isocyanate and/or formaldehyde
- Chemical products used in high pressure laminates and classified as harmful for health (Carc 2, Muta. 2, Repr. 2 in regards to CLP-forordning 1272/2008) are exempted from the prohibition.
- In HPL panels, there is an exception for resins with up to max. 10% by weight phenol classified with H341 and H301, H331.
- Formaldehyde with H350 (Carc.1B)/R45 and/or R49 and H341 (Muta.2)/R68 are exempted from the prohibition in this requirement. The formaldehyde content in adhesives is instead regulated in requirement R7 and R20, which are requirements addressing formaldehyde emission from the panel. Emissions from HPL production is regulated in requirement R17.
- Methanol in concentrations up to 10% by weight in adhesives and resins are exempted from the prohibition of classification according to the requirement.
- Wood preservative for products left outdoors permanently are exempted from this requirement. See R25 in chapter 2.5 for the requirements applicable to these products.
- Wood preservative for products not left outdoor permanently and containing biocides are exempted from the environmental hazard requirement.
- R26 "Requirements as to surface treatment" grants an exemption as regard classification as an environmental hazard.

Table 4: Classification of chemical products

Classification	Associated hazard symbol and R-phrases*	CLP-regulation 1272/2008*
Environmental hazard	N with R50, R50/53, R51/53 and/or R59	H400 very toxic to aquatic life H410 very toxic to aquatic life with long-lasting effects H411 toxic to aquatic life with long-lasting effects and/or EUH059 hazardous to the ozone layer
Highly toxic	Tx (T+ in Norway) with R26, R27, R28 and/or R39	H330 fatal to inhale H310 fatal in contact with skin H300 fatal if swallowed and/or H370 causes damage to organs
Toxic	T with R23, R24, R25, R39 and/or R48	H331 toxic if inhaled H311 toxic in contact with skin H301 toxic if swallowed H370 causes damage to organs and/or H372 causes damage to organs through prolonged or repeated exposure
Carcinogenic	T with R45 or R49. Or Xn with R40	H350 may cause cancer H350i may cause cancer by inhalation or H351 suspected to cause cancer
Mutagenic	T with R46 or Xn with R68	H340 may cause genetic defects H341 suspected to causing genetic defects
Toxic for reproduction	T with R60 and/or R61. Or Xn with R62 and/or R63	H360F may damage fertility and/or H360D may damage the unborn child H361f suspected to damaging fertility and/or H361d suspected to damaging the unborn child

* The classification applies in accordance with the Dangerous Substances Directive 67/548/EEC with subsequent amendments and adaptations and/or the CLP regulation 1272/2008 with subsequent amendments. During a transition period, until 1st June 2015 both types of classification can be used. After the transition period only classification according to the CLP-regulation applies, see above table.

- Declaration in accordance with form 3 in Appendix 2 by the raw materials manufacturer or raw materials supplier.
- Product safety data sheets/product sheets in accordance with the current legislation in the country of application e.g., Appendix II of REACH (1907/2006/EC).
- If the product is Nordic Swan Ecolabelled specifying name, producer, and license number of the chemical product.

R20 The content of free formaldehyde in chemical products

The quantity of free formaldehyde chemical products used in the production of Nordic Swan Ecolabelled furniture/fitments may be up to 0.2% by weight (2000 ppm), with the exception of adhesive which is mixed with a hardener.

For adhesives mixed with a hardener the limit of 0.2% by weight (2000 ppm) free formaldehyde is for the final mixture.

Exception:

The requirement does not apply to resin used for impregnation in HPL and laminate production. HPL and laminate production must instead comply with Requirement R17 Emissions from HPL production.

- Product safety data sheets/product sheets in accordance with the current legislation in the country of application e.g., appendix II of REACH (1907/2006/EC) and the declaration from the chemical producer (form 3).
- If the product is Nordic Swan Ecolabelled specifying name, producer, and license number of the chemical product.

R21 Contents and additives in chemical products

The requirements concern chemical products used in the productions of Nordic Swan Ecolabelled outdoor furniture or playground equipment (e.g., wood preservatives, surface treatment of wood, building panels, glue, metal and plastic.)

Exception:

Wood preservative for furniture or playground equipment left outdoors on a permanent basis is exempted from this requirement. See instead R25 for specific requirements applicable to these products.

The following must not be added to¹ the chemical product or material:

- Halogenated organic compounds. For example: PVC, organic chloroparaffins, fluorine compounds, flame-retardants, and organic bleaching agents². The biocides bronopol and CMIT in combination with MIT is exempted and has its own limits, see below

¹ It is accepted that ingoing substances may contain traces of substances that would otherwise be excluded in the requirements of the criteria. These are substances deriving from impurities. The trace quantity of the individual substance must not exceed 100 ppm (100 mg/kg, 0.01% by weight) in the raw material.

² Note the national legislations concerning PFOA in the Nordic countries. In Norway PFOA is regulated in «Forskrift om begrensning i bruk av helse- og miljøfarlige kjemikalier og andre produkter (produktforskriften)», §2- 32.

- PFOA (perfluorooctanic acid and salts/esters thereof) and PFOS (perfluorooctylsulfonic acid and compounds thereof)
 - Biocide chlorfenoler (their salts and esters) and dimethylfumerat
 - Bronopol Cas. No. 52-51-7, if concentration exceeds 0.05% by weight
 - The content of isothiazolin concentration exceeds 0.05% by weight
 - Mixture (3:1) of CMIT/MIT (5 Chloro-2-methyl-4-isothiazolin-3-one Cas. No. 247-500-7, /2-methyl-4-isothiazolin-3-one Cas. No. 220-239-6) must not be higher than 0.0015% by weight
 - Bisphenol A compounds
 - Phthalates
 - Azidirine and polyazidirines
 - Carcinogenic (Carc 1A/1B), mutagenic (Mut 1A/1B/2) and reproduction (Repr 1A/1B) damaging compounds (CRM)³.
 - Pigments and additives based on copper, lead, boron, creosote, tin, cadmium, chromiumVI and mercury and their compounds.
 - The contents of alkylphenoethoxysylates and other alkylphenol derivatives⁴.
 - The content of volatile organic solvents⁵ must not exceed 5% by weight in glue and wood preservatives for products that are not left outdoors permanently.
 - The aromatic content of solvents must not exceed 5% by weight in adhesives and wood preservatives for products that are not left outdoors permanently.
- For each chemical product present in the outdoor furniture or playground equipment a declaration is required from the chemical supplier, c.f. form 3.
- Declaration from the producer of the outdoor furniture or playground equipment form 3.
- If the product is Nordic Swan Ecolabelled specifying name, producer, and license number of the chemical product

R22 Nanomaterials

In the case of nanometals, nanominerals, nanocarbon compounds and/or nanoflourine compounds actively added to chemical products and used in the production of Nordic Swan Ecolabelled outdoor furniture or playground equipment, the licence applicant must submit documentation showing that the use of the nanomaterials in question will not cause problems in terms of health and the environment.

Nanoparticles are defined here as microscopic particles with dimensions of less than 100 nm. Nanometals include nanosilver, nanogold and nanocopper. Traces of nano-sized particles not added to achieve a specific function in the product are not encompassed by the requirement.

- Form 3 with declaration that nanomaterials are not used.
- If the product is Nordic Swan Ecolabelled specifying name, producer, and license number of the chemical product.

³ Formaldehyde with H350 (Carc.1B)/R45 and/or R49 and H341 (Muta.2)/R68 are exempted from the prohibition in this requirement. The formaldehyde content in adhesives is instead regulated in requirement R7 and R20, which are requirements addressing formaldehyde emission from the panel. Emissions from HPL production is regulated in requirement R17.

⁴ Alkylphenol derivatives are defined as substances that shed alkylphenols during degradation.

⁵ Volatile organic solvents are defined as solvents with a boiling point <250 °C at 101,3 kPa (1 atm).

2.5 Wood preservatives

Wood preservative products must fulfil the following requirements (R23, R24 and R25) and their requirements provided for in chap. 2.3 (R19, R20 and R22).

If the durable wood is Nordic Swan Ecolabelled then skip the rest of the requirements in chap. 2.5.

R23 Durability

The product must have long durability, i.e., be resistant to fungal attack.

This requirement can be met as described below either by choosing the right sort of wood with natural long durability, constructive wood preservation, impregnation, heat treatment or surface treatment.

Wood with natural long durability (durability class 1 or 2 according to EN 350-2) must not be treated with wood preservatives.

One of the following types of sustainability must be met:

- Wood with natural durability, defined as (durability class 1 or 2 according to EN 350-2) meets the requirement.
- Constructive wood as risk class 2 see standard EN 335-1 is achieved.
- Treatment of wood such as impregnation, heat treatment, coating, or other modification of the wood in accordance with the scope, as defined according to risk classes specified in the standard EN 335-1.

- Wood with natural durability: Describe the type of wood and the durability class.
- Constructive wood preservation: Description of the constructive wood preservation (cf. risk class 2, EN 335-1) and submission of fungicidtest according to EN 113 for biological testing for risk class 2 performed on the product. The tree must grow old with appropriate method, eg. EN 73 or EN 84.
- By impregnation, heat treatment or assault treatment submitted evidence of compliance risk class see the scope specified in EN 335-1. And: submission of a fungicidtest according to EN 113 for biological testing of the relevant risk class conducted on the product. The tree must grow old with appropriate method, eg. EN 73 or EN 84.
- If Nordic Swan Ecolabelled durable wood is used then indicate commercial name, manufacturer, and license number of the durable timber.

R24 Wood preservatives for products that are not left outdoors on a permanent basis

The active ingredients (biocides) in maintenance products must not be potentially bioaccumulable cf. the following definition:

If a substance has been tested for bioaccumulability on fish in accordance with OECD 305 A-E and the bioconcentration factor (BCF) is > 500 , the substance is viewed as bioaccumulable. If there is no BCF value, the substance is viewed as bioaccumulable if the substance $\log K_{ow} \geq 4.0$ in accordance with OECD 107, 117 or 123 Guidelines for Testing of Chemicals (ISBN 92-64-1222144) or similar, unless proven otherwise. If the lowest measured BCF ≤ 500 the substance is not regarded as bioaccumulable even if $\log K_{ow} \geq 4.0$.

OECD test guideline 107 cannot be used in the case of surface-active substances that have both fat- and water-soluble properties. Based on what we know today, documentation with a high degree of certainty must be presented to show that these substances and their degradation products do not represent any hazard to water-borne organisms in the longer time perspective.

Computer models (such as BIOWIN) will be accepted, but if the results of modelling are close to the threshold value, or if Nordic Ecolabelling has conflicting data, more secure information must be obtained.

- ☒ Using form 3 the chemical producer must provide a declaration that the requirements applicable to the specific chemical products are fulfilled in the case of each individual chemical product.

R25 Wood preservatives for products that are outdoors permanently (e.g., playground and park equipment)

This requirement applies to products such as playground equipment and park and street furniture intended to be left outdoors permanently⁶.

Impregnation Class A and Class M (according to the Nordic Wood Preservation Council's classification) are not permitted in risk class 4.

The impregnation of the product with biocides, such as heavy metals must fulfil Class B or AB according to the Nordic Wood Preservation Council's classification scheme (Class AB corresponds to Class B NP5/HC3 and Class B corresponds to Class NP3/HC3 according to the European Standard EN 335 and EN 351).

See list of approved products on <http://www.ntr-nwpc.com>.

Active ingredients must not be based on arsenic, chromium, organotin compounds or creosote oil.

For parts of the Nordic Swan Ecolabelled product that is in risk class 4, is allowed impregnation with NTR-Class A.

- ☒ Using form 3 the chemical producer must provide a declaration that the requirements applicable to the specific chemical products are fulfilled in the case of each individual chemical product.

2.6 The surface treatment of wood and wood-based panels

Chemical products for the surface treatment of wood must comply with the following requirements and the requirements of chap. 2.4 with the exemption of the requirement applicable to classification as an environmental hazard.

The requirement relates to the composition of the products at the time they are applied to the wood. The surface treatment requirements apply to primer, varnish, colour/stain, oil, wax, film and laminate.

R26 Surface treatment requirements

The surface treatment must comply with one of the following requirements:

1. Products for surface treatment must not be classified as an environmental hazard (N, with R50, R50/R53, R51/R53 and/or R59) or according to the CLP-statutory (Dangerous to the water environment category acute 1 H200, category: Chronical 1 H410, category: Chronical 2 H411 and/or EUH 059) and may as a maximum contains 7% by weight x effectiveness of the organic solvent.

The aromatic content of the solvent must not exceed 5% by weight.

2. Applications of substances classified as an environmental hazard (N, with R50, R50/R53, R51/R53 and/or R59) or according to the CLP- statutory (Dangerous to the water environment category acute 1 H200, category: Chronical 1 H410,

⁶ A product is considered permanently outdoors if it is bolted to the ground or otherwise not mobile.

category: Chonical 2 H411 and/or EUH 059) may as a maximum be applied 14g/m² of surface. For surface treatment, the quantity of organic solvent must not exceed 35 g/m² of surface. The aromatic content of the solvent must not exceed 5% by weight.

The classification applies in accordance with the Dangerous Substances Directive 67/548/EEC with subsequent amendments and adaptations and/or the CLP regulation 1272/2008 with subsequent amendments.

During a transition period, until 1st June 2015 both types of classification can be used. After the transition period only classification according to the CLP-regulation applies

Volatile compounds are defined as compounds with a boiling point of < 250 oC at 101.3 kPa (1 atm).

The following degrees of effectiveness are used for the purpose of calculation of the quantities applied (see table). The degrees of effectiveness are standard values and must be adapted. If other degrees of effectiveness can be shown to apply, they may be used instead if documentation can be provided.

Table 5: Efficiencies of different coatings

Spray varnishing without recycling	50%
Spray varnishing with recycling	70%
Spray varnishing, electrostatic	65%
Spray varnishing, bells/disc	80%
Roller varnishing	95%
Blanket varnishing	95%
Vacuum varnishing	95%
Dipping	95%
Rinsing	95%

Example: If the product is surface treated with the aid of spray varnishing without recycling, the product may as a maximum contain 3.5% organic solvents (7 x 50%).

- The chemical producer must declare in Form 3 that the requirement applicable to the specific chemical products is fulfilled for each chemical product.
- Specify surface treatment method.
- If the requirement is documented using Alternative 2, information must be submitted to permit the calculation of the quantity supplied in surface treatment. The quantity of surface treatment used per surface (g/m²) must be specified.

2.7 Maintenance products for wood

The following requirements apply to maintenance products recommended by the producer/supplier for products made of wood.

R27 Maintenance Products

Chemical products for maintaining wood must meet the requirements specified in R19, R20, R21, R22 and R24. The manufacturer shall specify the trade name of the recommended product.

- The chemical producer of maintenance products must declare on Form 3 that the requirement is fulfilled in the case of the recommended product.
- The licensee shall abandon trading name on the recommendation of date product.

2.8 Metal

Exemptions are made from the requirements R28 to R31 for metal parts that weight less than 50 grams. The exception does not apply to coating with cadmium in R31 which is also prohibited by the Nordic authorities.

2.8.1 Re-use

R28 Scope for recycling

Metal parts in the product must be separable from other materials in the product without the use of special tools to facilitate reuse.

- Description of how metal parts can be separated from other materials in the product.

R29 More than 50% by weight metal in the product

Product, with more than 50% by weight metal in the product, shall either fulfil alternative a or b in this requirement.

Alternative a:

At least 50% by weight of aluminium and 20% by weight of other metals in the product must comprise recycled metal. Alternatively, the smelting plant that supplies the metal must utilise at least 50% recycled aluminium and 20% recycled metal (other) in production on an annual basis.

Recycled metal is defined here as both pre-consumer and post-consumer as defined by ISO 14021.

Alternative b:

Aluminium and other metals in combination shall meet the following requirements for recycled metal:

$$re_{Al} * kg_{Al} + re_{Me} * kg_{Me} \geq 0,5 * kg_{Al} + 0,2 * kg_{Me}$$

Where:

kg_{Al} og kg_{Me} are the weight of aluminium and other metals in kg respectively.

re_{Al} og re_{Me} are the proportion of recycled aluminium and other metals respectively. This is to be given as a number between 0 and 1 (corresponds to 0% to 100%).

The proportion of recycled material can be documented for the actual share or on an annual basis. If declared on an annual basis the melting plant, that supplies the aluminium/metal, shall declare the recycling rate. Recycled metal is defined here as both pre-consumer and post-consumer as defined by the ISO standard 14021.

- Declaration (Form 6) from the producer of the product.
- Declaration (Form 6) from the supplier of metal parts.

2.8.2 Surface treatment of metal

R30 Chemical products for the surface treatment of metal

Chemical products for the surface treatment of metal must comply with requirement R19 and R22 in Chap. 2.4. Exceptions are given for R19- R22 in the metal production and the coating of the metal (metallisation).

- Account of the chemical substances used for surface treatment in accordance with Form 3.

R31 The surface treatment of metal

Metals must not be plated with cadmium, chromium, nickel, zinc, or compounds thereof.

In exceptional cases, plating with chromium, nickel or zinc may be accepted in the case of small parts (screws, bolts, mechanisms etc.) if this is necessary on the grounds of heavy physical wear or parts that need to close tightly, are exposed to heavy wear or require plating for reasons of safety (for example table legs, chair legs and the low-bearing parts of playground equipment). The exception does not apply to parts that are in frequent contact with the skin of users (e.g. armrests).

The chrome plating process must be based on trivalent chromium and no hexavalent chromium must be used in any pre or post treatment processes. Chrome plating, nickel plating and zinc plating processes must use treatment processes, iron exchange processes and membrane processes or equivalent processes enabling chemical products to be reused insofar as this is possible.

Emissions from surface treatment processes must be re-used and destroyed. The system must be closed and without emissions, with the exception of zinc where the maximum emission must not exceed:

Zink: 0.5 mg/l

Sampling method for zinc: EN ISO 11885. Sampling frequency: Emission to water is calculated as year effective average and based on at least on representative 24 hours measuring per week. Sampling: Samples of the process water taken after external cleaning and the analyses must be carried out on unfiltered samples. Alternatively, a sample frequency as appointed by authority is accepted.

- Declaration from the furniture producer or supplier of surface treated metal, Form 6.
- In the case of surface treatment with chromium, nickel, or zinc:
- The need for this surface treatment must be documented with the aid of tests or a report showing that the metal surface is exposed to very heavy physical wear, is a part that needs to close tightly or needs the coating for safety reasons (play equipment).

2.9 Plastic and rubber

Small plastic parts (e.g., screws, pins and dowels) are not included for the purpose of calculating the weight proportion and are not encompassed by the following requirements.

R32 Material description and labelling of plastics

A description must be provided of the types of plastic, fillers, and reinforcements in plastic parts. Parts made of plastic and weighing more than 50 g must be visibly labelled in accordance with ISO 11469.

Parts of PVC may not be used (except small parts)

- Declaration (Form 7) from producer or supplier of plastic.

R33 Requirements as to classification and surface treatment

For requirements applicable to chemical substances used as additives or for surface treatment, see R21. Documentation as described in R21 and Form 3.

- Statement by the plastic manufacturer about chemical substances in additives and coatings in accordance with Form 3.

R34 Nitrosamines in rubber

The content of nitrosamines or nitrosamine soluble substances must not exceed 0.01 mg/kg and 0.1 mg/kg of vulcanised rubber respectively.

- ☒ Statement by the rubber manufacturer about chemicals in the admixtures according to Form 3.

R35 Surface treatment of plastic

Surface treatment is permitted if it can be shown that this will not undermine the possibility of re-using the plastic and that the surface treatment process fulfils the requirements contained in R21.

- ☒ A description showing that surface treatment will not undermine the possibility of re-using the plastic. Statement that shows that the surface treatment fulfils requirement R21. Form 3 may be used.

2.9.1 Requirements that apply if there is more than 10% by weight of plastic in the product

Different types of plastic materials present in quantities in excess of 1% by weight of the weight of the plastic materials must be added. If in total they make up more than 10% by weight, the following requirements must be fulfilled.

R36 Recycled/recovered plastic

For products consisting of more than 10% by weight of plastic, 50% of the plastic must consist of pre- or post-consumer recycled material. Recycled plastics should not contain halogenated flame retardants. However, contaminants are allowed up to 100 ppm.

Recycled plastic is defined in the requirement according to ISO 14021 in the following two categories:

"Pre-consumed / commercial" is defined as material derived from the waste stream during a manufacturing process.

The use of materials such as rework, regrind or scrap produced by a manufacturing process and recyclable in the same process as the material was created, is not considered as recycled pre-consumed material.

Nordic Ecolabelling defines reworking, regrind or scrap, which cannot be reused directly in the same process, but which requires reprocessing (for example in the form of sorting, re-melting, and granulating) before it can be reused, in order to be pre- consumed / commercial material. Whether this happens internally or externally.

"Post-Consumed / Commercial" is defined as material generated by households or commercial, industrial, and institutional facilities in the role of end-users of a product, which can no longer be used for its purpose. This includes material from the distribution line.

- ☒ Declaration (Form 7) from the producer or supplier of plastic.

2.10 Requirements as regards consumer information, refuse processing and recycling systems**R37 Information for the consumer**

The producer/supplier must inform the consumer of how best to use, maintain and store the product. The information must be made available in the official

language in the country in which the Nordic Swan Ecolabelled product is marketed.

The product must be accompanied by written instructions specifying:

- The area of use/end users for which the product is intended.
- How the product must be stored during the period of the year in which it is not in use (the winter season). This requirement applies to outdoor furniture not intended for permanent outdoor use.
- How the product should be maintained, what maintenance products are best suited for the product (oils, wax etc.) and how frequently these maintenance products should be used. Specific recommendations must be provided for maintenance products, with trade names, for wood in outdoor furniture or playground equipment and these products must be available in the countries in which the product is marketed.

Recommended maintenance products must comply with these specific requirements applicable with maintenance products in chap. 2.7.

The way in which the products must be handled at the end of its useful life (as waste). If the product has been treated with wood preservatives containing biocides the producer must recommend that the consumer sort treated wood so that it is not mixed with untreated wood. The consumer must be urged to not incinerate treated or proofed wood. E.g., in an open fire, in a stove, an open fireplace, or wood-burning stove or wood-fired boiler.

- ☒ Copy of information material accompanying the outdoor furniture or playground equipment.

R38 Production waste

Wood based waste, metal scrap and plastic waste occurring during production of the product must be reused during production, delivered for collection for recycling, used as an energy source or composted.

Wood based waste containing wood preservative must be handled in the way recommended by the authorities in the country of production.

- ☒ Description of waste handling plan with the discussion of waste fractions, waste quantities and the handling of the individual fractions.

R39 Packaging requirements and recycling systems

Packaging/wrapping must not contain chlorinated plastic.

Nordic Ecolabelling decided on 9 October 2017 to remove the requirement for recycling systems.

- ☒ Account of the packaging materials used by the producer/supplier.
- ☒ Declaration from the producer/supplier of chlorinated plastics that chlorinated plastics are not used in the packaging.

3 Quality and regulatory requirements

3.1 Functional requirements

R40 Durable wood

Wooden part in the product that come in the contact with the ground must be made of a durable wood or be treated (proofed or surface treated) or protected by means of screening, so that durability class 4 EN 351-1-2007 is fulfilled.

- Description of how wood comes into contact with the ground is protected and documentation of compliance with durability class 4, c.f. EN 351-1-2007.
- Description of how the design of the wooded product enables water to run off automatically.

R41 Safety, strength and stability

The product must comply with the relevant requirement levels for safety, strength, and stability relevant to the areas of application of the product.

Outdoor furniture

Outdoor furniture must as a minimum fulfil the requirement level for domestic use in accordance with EN 581-1, EN 581-2, EN 581-3 and EN 581-4. Outdoor furniture does not need to be tested in accordance with annex A of 581-2 and 581-3 (testing at high and low temperature).

If the product is designed/ marketed for contract use, the product must be tested to requirement levels relevant for such use.

Playground equipment for public playgrounds

Playground equipment for public playgrounds, e.g., parks and schools, must fulfil the relevant requirement level for safety and in the following standards. EN 1500 supplements EN 1176 and can therefore not stand alone.

Standard	Area
EN 1176-1	General safety requirements
EN 1176-2	Swings
EN 1176-3	Slides
EN 1176-4	Cableways
EN 1176-5	Carousels
EN 1176-6	Rocking equipment
EN 1176-7	Guidance for installation, inspection, maintenance, and operation
EN 1500	Natural playgrounds

Playground equipment for domestic use

Playground equipment for domestic use must fulfil the main requirements of the Toys Safety Directive 2009/48/EC as amended. This can be safeguarded in amongst other ways by documenting compliance with the harmonized standard, EN 71-1 (Mechanical and physical properties).

If the product fulfils the requirements of some other standard than the above EN standards, an independent test institution must give a statement on the way in which the standard relates to the above requirement levels.

- Information on the area of use of the product (domestic or public), the standards, test institutions and test report utilized.

- If relevant a description of how international/national standards relate to EU's requirement level.

3.2 Quality requirements and the requirements of the authority

In order to safeguard fulfilment of the Nordic Ecolabel criteria the following procedures must be implemented.

If the applicant has a certified environmental management system in accordance with ISO 14 001 or EMAS, in which the following procedures are implemented it will be sufficient for the credited audited to confirm implementation of the requirements.

R42 Responsibility for the Nordic Ecolabel

One person at the business must be allocated responsibility for compliance with the Nordic Swan Ecolabel requirements and there must also be a contact person in touch with Nordic Ecolabelling.

- Organizational structure showing the personnel responsible for the above areas.

R43 Documentation

The licensee must be able to present a copy of the application as well as the material on which facts and calculations are based (including test reports, documents from subcontractors and the like) underlying the documentation submitted in the connection with the application.

- 🔍 Checked on site.

R44 The quality of the product

The licensee must guarantee that the quality of the Nordic Swan Ecolabelled product will not deteriorate during the term of validity of the licence.

- Procedures for compiling and if necessary, processing complaints about the quality of these Nordic Ecolabelled products.

R45 Planned changes

Planned changes that impact on the Nordic Ecolabel requirements must be reported in writing to Nordic Ecolabelling.

- Procedures showing how planned changes are handled.

R46 Unforeseen deviations

Unforeseen deviations that impact on the Nordic Ecolabel requirements must be reported in writing to Nordic Ecolabelling and recorded in a journal.

- Procedures showing how unforeseen deviations are handled.

R47 Traceability

The licensee must be able to trace the Nordic Swan Ecolabelled product throughout the production process.

- Description/procedures for fulfilling the requirement.

R48 Laws and regulations

The licensee must ensure that the applicable provisions governing safety, working environment, environmental legislation and production site specific terms/licences are followed at all production sites at which the Nordic Swan Ecolabelled product is produced.

- ☒ Duly signed application form.

Regulations for the Nordic Ecolabelling of products

When the Nordic Swan Ecolabel is used on products the licence number shall be included.

More information on graphical guidelines, regulations and fees can be found at www.nordic-ecolabel.org/regulations

Follow-up inspections

Nordic Ecolabelling may decide to check whether the product fulfils Nordic Ecolabel requirements during the licence period. This may involve a site visit, random sampling or similar test.

The licence may be revoked if it is evident that the product does not meet the requirements.

Random samples may also be taken in-store and analyzed by an independent laboratory. If the requirements are not met, Nordic Ecolabelling may charge the analysis costs to the licensee.

The duration of licence

Nordic Ecolabelling adopted the criteria on 17 March 2011, and they will remain in force until 30 June 2015.

On 16 February 2012 the Secretariat Manager's meeting decided to adopt changes regarding formaldehyde (R7). The new version is called 3.1.

On 15 November 2012 the Secretariat Manager's meeting decided to adopt the following: Change regarding formaldehyde (R7) and exemption for requirements R22 to R25 for metal parts weighing less than 50 grams. The new version is called 3.2.

On 12 November 2013 the Secretariat Manager's meeting decided to adopt the following: Change regarding recycled metal (R23). Here is given an alternative in the requirement of combining the percentage share of the various metals. The new version is called 3.3.

On 3 April 2014 the Secretariat Manager's meeting decided to prolong the criteria until 31 March 2017. The new version is called 3.4.

On 3 September 2014 the Board of Directors decided to adopt changes regarding the requirements R19. It is now clear that the requirement only applies to wood preservatives with biocides or heavy metals. The new version is called 3.5.

At the Nordic Ecolabelling board meeting November 18, 2014, it was decided to extend the criteria by 2 years, to specify that wood / bike / bus and tool sheds are included in the product group, but that composite materials are not (R1).

As well as expanding the product group with requirements for HPL plates, when these are approved in version 6 of Building board in February 2015.

On 17 November 2014 the Board of Directors decided to remove requirement R43 Marketing. The new version is called 3.6 and is valid until 31 March 2019.

On 16 June 2015 the Nordic Ecolabelling's Criteria Group approved to insert requirements for HPL panels in its own section in the criteria at the same time the product group name changed to Outdoor furniture, outdoor fixtures and playground equipment. The new version is 3.7.

On 8 January 2016 the Nordic Ecolabelling's Criteria Group approved to insert an except for bronopol up to 0.05% by weight in requirement R21. The new version is 3.8.

On 7 February 2017 the Nordic Ecolabelling's Criteria Group decided to prolong the criteria until 31 March 2020. The new version is called 3.9.

On 8 March 2017 the Nordic Ecolabelling's Criteria Group decided to implement Nordic Ecolabellings new forestry requirements as an alternative to the present forestry requirements. The new version is called 3.10.

On 9 October 2017 Nordic Ecolabelling decided to remove recycling systems in requirement R39 Packaging requirements and recycling systems and on the 15 of November 2018 Nordic Ecolabelling decided to prolong the criteria until 31 March 2021. The new version is called 3.11.

The Ecolabelling licence will continue to apply for as long as the criteria are fulfilled and until these criteria cease to apply. The criteria may be extended or adjusted, in which case the licence will be extended automatically, and the licensee will be notified.

One year at the latest (before the criteria cease to apply) the notification will be provided of the criteria that will apply after the final validity date of the current criteria. The licence holder will be given the opportunity to renew the licence.

On 19 February 2019, Nordic Ecolabelling decided to adjust requirement R36 Recycled/recovered plastic. The new version is called 3.12.

On 16 December 2019 Nordic Ecolabelling decided to prolong the criteria until 31 December 2021. The new version is called 3.13.

On 20 October 2020 Nordic Ecolabelling decided to prolong the criteria until 30 June 2022. The new version is called 3.14.

On 5 October 2021 Nordic Ecolabelling decided to prolong the criteria until 31 December 2022. The new version is called 3.15.

On 23 August 2022 Nordic Ecolabelling decided to prolong the criteria until 30 June 2023. The new version is called 3.16.

New criteria

In the next revision of the criteria the following areas will be assessed:

- New requirements for reducing climate-energy impact
- Emissions of VOC at factory level
- Requirements for preservation of wood
- Recycled/recovered plastic

Appendix 1 Testing and control

1 Requirements as regards analysis and test institutions

The applicant is responsible for documentation and analysis costs.

1.1 Requirements that regards the test institution

Sampling for testing must be performed in a competent manner. The laboratory/ test institution must be impartial and competent. The unprocessed data must be available for checking by the ecolabelling organization.

The laboratory performing the analysis must fulfil the general requirements contained in standard EN ISO 17025 or be an official GLP-approved laboratory. The applicant will be liable for costs in connection with documentation and analyses.

The manufacturer's own laboratory may be approved to perform analyses and tests if:

- The analyses and tests are monitored by the authorities, or if
- The manufacturer has a quality assurance system encompassing sampling and analyses and has been certified to ISO 9001 or ISO 9002 or
- The manufacturer can demonstrate that it is consistent with the initial analysis/testing performed as a parallel analysis/test by an accredited laboratory and the manufacturer's own laboratory and that the manufacturer takes samples in accordance with a predetermined sampling.

1.2 Classification of environmental hazard

In a number of cases requirements are imposed as regards the environmentally harmful property of chemical substances. Classification is based on testing and is subject to the individual exemptions stated later in this section.

This concerns requirements applicable to:

- Adhesives and binding agents in wood-based panels.
- Agents for service treatment of wood-based materials.
- Other adhesives used in production.

Biodegradability, aerobic

Testing for biodegradability is conducted using test method number 301 (A to F) in OECD Guidelines for Testing of Chemicals (ISBN 92-64-1222144) or corresponding test methods.

Bioaccumulability

If the solution of the substance in n-octanol is at least 100 times greater than in water ($Pow > 3$) the substance is regarded as bioaccumulable unless information to the contrary can be provided (OECD test guidelines 107 or 117). The bioaccumulability of a substance may also be tested on fish, c.f. OECD test guidelines 305 A-E. Bioconcentration factor (BCF) of the substance is 100 or more the substance regarded as bioaccumulable.

Ecotoxicity

Ecotoxicity (aquatic toxicity) is tested with test method number no. 201, 202 and 203 in OECD Guidelines for Testing of Chemicals or equivalent test methods.

Exemptions from the testing requirement

The following substances are exempted from testing for aquatic toxicity, biodegradability and bioaccumulability.

- Substances known to be environmentally hazardous, i.e. substances listed by the public authorities.
- Subjects with a short life under test conditions (< 1 hours for octonal/water-partition test, < 1 day for all other tests, degradation products are tested as required.
- Substances that the applicant can demonstrate and not environmentally harmful.

The following are exempted from the requirement as to testing for bioaccumulability: High- molecular substances (molecular weight > 700, lowest calculated section > 9.5 Å or length > 5.5 nm).

Scientifically researched references to the literature may be used to demonstrate that the constiuence substances of the chemical product fulfil the requirements.

1.3 Formaldehyde in wood based panels

Formaldehyde

For the purpose of determining the content of free formaldehyde, the most recent applicable European standard for the perforator method is to be used. This must at all times be followed by the applicable EN 120 standard until and if the method is replaced by a different EN method. Other test methods such as JIS A 1460 or similar can be used on request to the Nordic Ecolabel. It shall be reported which method is used and conversion factors shall be documented if such are used.

As a suitable chamber method for panels of wood and mineral wool, the European Standard: ENV 717 – 1 is recommended. To be followed by the EN standard applicable from time to time for reference determination of emission value. Other test methods, such as ASTM D 6007-2 or similar, may be approved by the Nordic Ecolabel. The method used must be reported and conversion factors shall be documented if such are used.

1.4 COD emissions

Test: For measuring COD-emissions to water use ISO 6060 2.nd ed 1989, NS 4748 alternatively DS 217, SFS 3020, SFS 5504, SS 028142, DIN 38409 part 41, NFT 90101, ASTM D 1252 83 or test kits that use potassium dicromate as an oxidizing agent (and with silver sulphate as a catalyst), e.g. Dr. Lange, Hack or WTW test of substances in chemical products. "Determination of the chemical oxygen demand" or equivalent.

Test frequency: In continuous production an annual average value must be used based on at least one representative daily sample per week.

If new processed or internal improvements are introduced the emission level must be determined using at least 40 daily samples in succession.

Sampling: Samples of process water must be taken after external treatments and the analysis must be performed on unfiltered samples. Alternatively, a sampling frequency determined by the authorities will be accepted.

1.5 Measurement of Air quality - workplace atmospheres (R17)

Air measurements are carried out in accordance with relevant standard test methods, including among others:

- EN 689, Air quality - Workplace atmospheres, guidance in the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy.
- EN 482, Air quality - Workplace atmospheres, general performance requirements for methods for determining the concentration of chemicals in the air.
- EN 14042, Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.

Air measurements of phenol and formaldehyde

Air Measurements of phenol and formaldehyde submitted for the last 12 months, with a description of the sampling program, including measurement methods and measuring frequency. Air measurement is performed both for a reference period of 8 hours time weighted average (TWA) and a short-term value of no more than 15 minutes.

Air measurement shall be conducted as the exposure measurement, which conducted a review of each employee's exposure to pollution. For these measurements measuring equipment shall be personally carried.

When sampling for exposure measurements, thus including shall be ensured:

- the sampling is carried out under normal operating conditions with normal ventilation
- including the particularly stressful phases of different work processes
- the sampling time is so long that it shows a representative average value
- the planning of sampling carried out the identification of potential variations in concentration during the work or working

1.6 Emissions to water Zinc

Test methods: EN ISO 11885 for Zinc.

Sampling frequency: Emissions to water are calculated as an annual average value and based on at least one representative daily sample per week.

Sampling: Samples of process water must be taken after external treatments and the analysis must be performed on unfiltered samples. Alternatively, a sampling frequency determined by the authorities will be accepted.

Appendix 2 Forms

Skjema for krav til trebaserte plater
Erklæring om forbudte innholdsstoffer og aromatiske løsningsmidler

Det kjemiske produktets navn _____
 Produsent/importør av kjemisk produkt _____

• Er produktet tilsett halogenerede organiske bindemidler?	<input type="checkbox"/> ja	<input type="checkbox"/> nei
• Er produktet tilsett halogenerede organiske fargestoffer?	<input type="checkbox"/> ja	<input type="checkbox"/> nei
• Er produktet tilsett polyklorerte bifenylter?	<input type="checkbox"/> ja	<input type="checkbox"/> nei
• Er produktet tilsett alkylfenoler?	<input type="checkbox"/> ja	<input type="checkbox"/> nei
• Er produktet tilsett ftalater?	<input type="checkbox"/> ja	<input type="checkbox"/> nei
• Er produktet tilsett pigment/fargestoffer basert på bly, lin, kadmium, kromVI og kvikksølv og deres forbindelser?	<input type="checkbox"/> ja	<input type="checkbox"/> nei
• Er produktet tilsett aromatiske løsningsmidler? Hvis ja, angi innhold i vekt-%: _____	<input type="checkbox"/> ja	<input type="checkbox"/> nei
• Er produktet tilsett alkylfenoloksyler eller andre alkylfenolderivat? Alkylfenolderivatet defineres som stoffer som avspalter alkylfenoler ved nedbrytning. Hvis ja, angi innhold i vekt-%: _____ Oppgi testmetoder og testresultater: _____	<input type="checkbox"/> ja	<input type="checkbox"/> nei

Produsentens underskrift: _____
 (stift)

_____ (tillatelse)
 (ansvarlig salgsbehandler) (telefon)

Bemerk: Innhold av klassifiserte stoffer dokumenteres separat ved sikkerhetsdatablad/ leverandærbruksanvisning, og ved utfylling av Vedlegg 4.

Form 1 Overview of materials from producer

Producer:	Signatory:
Product:	Total weight in kg:

Table 1 below shall give a general overview over which requirements that are relevant for the ecolabelled product. The weight and composition of each material can decide which requirements that apply. Applicants must fill in table 1.

Table 1 Overview of materials and chapters where the requirements are specified

Material	Level	Requirement	Form	Quantity	Relevant
Wood	General	R2 – R4	2a-2c		Yes • No •
Wood-based panels	General (more than 5% by weight)	R5 – R8	3		Yes • No •
	More than 10% by weight	R9 – R11	2a-2c and 5		Yes • No •
Highpressure laminate (HPL) panels	More than 10 weight-% HPL in the ecolabelled product	R12			Yes • No •
	More than 10 weight-% paper/pulp in the panel	R13 and R14	2d		Yes • No •
	More than 30 weight-% paper/pulp in the panel	R15	2e		Yes • No •
	More than 10 weight-% HPL in the ecolabelled product	R16 and R17			Yes • No •
Chemical products	General	R18 – R22	3		Yes • No •
Wood preservative	General	R23	3		Yes • No •
	Not outdoors permanently	R24	3		Yes • No •
	Outdoors permanently	R25	3		Yes • No •
Surface treatment of wood and wood-based panels	General	R26	3		Yes • No •
Maintenance products for wood	General	R27	3		Yes • No •
Metal	General	R28	6		Yes • No •
	More than 50% by weight	R29	6		Yes • No •
Surface treatment of metals	General	R30 – R31	3 and 6		Yes • No •
Plastic	General	R32 – R35	3 and 7		Yes • No •
	More than 10% by weight	R36	7		Yes • No •
Other requirements	General	R37 - R49	8		

The table below shall give an overview over the following:

- All suppliers of products/materials that are a part of the product.
- Which part the product/material is a part of (for example seat, frame, board etc.).
- What type of material/product that is used (for example wood, metals, plastics, varnishes, glue etc.). If relevant, which composition the material has (for example fiberboard and plastic).
- Weight in kg for each material and % by weight. The total weight for the product is given in the first table of Form 1.

Nordic Ecolabelling will also accept complete worksheets or similar from the applicant if all required information is given. However, Table 1 above must always be filled out.

Table 2 Overview of suppliers, product parts, weights and compositions of the products/materials

Supplier	Product part	Material/product and composition	Weight in kg	Weight-%
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				

Form 2a Wood, willow and bamboo

Origin, traceability and certified raw material

(To be filled in by supplier or producer)

Supplier/Producer:
Product type (for example wood chips, veneer, timber, solid wood):

For documenting the wood raw material:

- Type of wood/willow/bamboo and geographical origin (country/state and region/province)
- Copy of certificate(s) of forestry certification and type of standard
- Proportion (%) wood from certified forestry in product
- Copies of invoices may be used as documentation

Table 3 Overview of origin, traceability and certification

Type of wood (Latin and English names)	Geographical origin (country, state)	Certification (see requirements on next page)	Supplier (see requirements on next page)

Has any of the timber been surface treated with preservatives since felling?

Yes No

If yes:

Is the insecticide classified by the WHO as Type 1 or 1B?

Yes No

An overview can be found at: http://www.who.int/ipcs/publications/pesticides_hazard/en, "The WHO recommended classification of pesticides by hazard and guidelines to classification 2009" or by contacting one of the secretariats.

Attach 16 point product safety data sheet or equivalent documentation

Name of supplier:

Date	Company name
Person responsible	Telephone Email:

Form 2b Wood, willow and bamboo

Description and proportion of certified raw material

(To be filled in by the producer)

Documentation of the raw material:

Give a detailed description of the chain of suppliers from felling of the raw material to the producer:

Alternatively, submit a separate flow diagram showing the chain of suppliers from felling of the raw material to the producer

Table 4: Raw materials purchased by the supplier on a yearly basis. Applies to both certified and non-certified materials

Type of raw material*	Supplier	Quantity (m ³ /year)	Proportion (%) wood from certified forestry
Total:			

Name of supplier:

Date:	Company name:
Person responsible:	Telephone: Email:

Form 2c Forestry certification requirements (chap. 1.1)

Wood used in the product must be certified by a third party on the basis of a current applicable forestry standard, complying with the requirements placed on standard and certification system.

The following requirements apply to standards and certification systems that are acceptable to Nordic Ecolabelling.

The standards

1. The standard must balance economic, ecological and social interests and comply with the Rio Declaration's forestry principles, Agenda 21 and the Forest Principles and respect relevant international conventions and agreements.
2. The standard must contain absolute requirements and promote and be directed towards sustainable forestry.
3. The standard must be widely accepted nationally or internationally and be developed as a part of an open process in which ecological, economic and social interests are invited to participate.

The certification system

The certification system must be transparent, enjoy broad national and international credibility and be capable of verifying that the requirements of the forestry standard (see above) have been met.

The certification body

The certification body must be independent, credible and capable of verifying that the requirements of the standard have been fulfilled. It must be able to communicate the results and to facilitate the effective implementation of the standard.

Documentation

- Copy of the forestry standard, name, address and telephone number of the organisation responsible for drafting the standard and the approval report of the certification body.
- References must be provided to persons representing parties and interest groups invited to participate in the development of the forestry standard.
- The ecolabelling organisation has the right to require the further information to be submitted with a view to assessing whether the requirements of the standard and the certification system have been met.

Nordic Ecolabelling may in some cases agree to grant a licence even if the wood used in production has not been certified in accordance with an approved forestry standard. If so, some other form of credible documentation must be submitted showing that the timber originates in a sustainable forestry operation with requirement levels equivalent to the approved forestry standards.

Form 2d Paper, cardboard and pulp – recycled/certified fibres

Name of the raw material:
Producer/supplier of raw materials for paper, cardboard and pulp:

Does the paper, cardboard or pulp contain at least 70% by weight recycled fibre? Yes No

If the paper, cardboard or pulp contains less than 70% by weight recycled fibre, state how much: _____

Does the paper, cardboard or pulp contain at least 30% by weight certified* wood fibre? Yes No

If the paper, cardboard or pulp contains less than 30% by weight certified wood fibre, state how much: _____

* Where operation has been certified under the forestry standard and certification system stated in Appendix 4c or certified as organically cultivated or where cultivation is in the process of being converted to organic production

Signature of producer/supplier of paper/cardboard or pulp:

Date	Company name
Person responsible	Telephone Email:

Form 2e Energy requirements for paper and pulp production

2e.1 Guidelines for energy calculation

Requirements are laid down for the application of energy in the form of fuel or electricity. The starting point is information about the actual energy consumption from production compared to a documented reference value. The quotient of these values is stated as energy points.

The energy calculations cover all the paper products: both paper production and the pulp employed. In the case of paper, the calculations are performed without regard to fillers. Energy consumption for transporting the raw materials and for conversion and packing are not included in the energy calculation.

Applied energy:

State the total energy consumption for the paper or pulp production processes per tonne of product, broken down into fuel and electricity.

Fuel:

With regard to fuel, bought-in fuel, internally produced fuel and residual products should all be stated. This means, for example, that lye, bark and wood chips must be included to the extent that their heating values contribute to energy supplies for the process. Fuel used both for heat production and internal electricity production must be stated. Fuel consumption is calculated from the effective heating value of the dry substance. The calculations may derive from internally measured heating values or values according to table 2e.3. If the fuel is damp, the calculation method in table 2e.4 may be used.

As fuel can also be used for electricity production internally, in such cases corresponding amounts of fuel must be subtracted from the actual fuel consumption ($=1.25 \cdot$ internally produced electricity). This will avoid the double counting of energy information for fuel used for internal electricity production.

Electricity:

Both bought-in and internally produced electricity must be included in the calculations.

- ☒ The calculation of electricity and fuel consumption must be based on invoices and readings from in-house electricity meters. The calculated points level must then be forwarded by the pulp producer to the paper producer and to Nordic Ecolabelling. The paper producer can then carry out a calculation of the total energy points for the finished paper. The calculation includes the energy points for all pulps used and energy points for paper production.
- ☒ Internally produced electricity can be documented by readings from in-house electricity meters. In the case of bought-in fuel, the amount purchased must be reconciled with the amounts at the start and end of the year in question. Internal consumption of residual products such as lye, bark, wood chips, etc. is calculated from the estimated heating values of the fuels used (see Table 2e.3). Hence, the total consumption of electricity and fuel is reported.

Steam:

If surplus steam from another production process is used (e.g. from another industry), the energy content of the steam must be included in the calculation. In this case, the steam table in in this form should be used. If steam from electric boilers is used, the energy content must be converted to fuel in the same way, but the energy content must be multiplied by 2.5.

Integrated production:

The energy reference values for both paper production and pulp production must be used for integrated production (Tables 2e.1 and 2e.2). For integrated enterprises which act both as suppliers of market pulp and pumped pulp for ecolabelled products, the reference value for drying the market pulp must be used for the market pulp but not for the pumped pulp.

Energy surplus:

Energy surpluses sold in the form of electricity, steam or heat should be subtracted from the total consumption. The amount of fuel used for producing sold-on electricity or heat is calculated by dividing the sold electricity or heat by 0.8. This corresponds to an average efficiency for the total production of electricity and heat. Alternatively, the actual efficiency of the plant for converting fuel to heat energy may be used, if this can be documented to Nordic Ecolabelling.

2e.2 Energy calculation, paper manufacturer**Energy points for paper production**

The energy points $P_{p(\text{electricity})}$ and $P_{p(\text{fuel})}$ for paper manufacture on the paper machine are calculated by the following formulae:

$$P_{p(\text{electricity})} = \frac{\text{Electricity}_{\text{used}}}{\text{Electricity}_{\text{reference}}}$$

and

$$P_{p(\text{fuel})} = \frac{(\text{Fuel}_{\text{used}} - 1.25 \cdot \text{in-house generated electricity})}{\text{Fuel}_{\text{reference}}}$$

The values for $\text{Electricity}_{\text{reference}}$ and $\text{Fuel}_{\text{reference}}$ are taken from Table 2e.1 below.

Table 2e.1. Energy for paper production

Processes	Fuel kWh/t Reference value	Electricity kWh/t Reference value
FBB* (folding box board)/ SBS* (solid bleached sulphate)/ SBB* (solid bleached board) SUB* (solid unbleached board) WLC* (white lined chipboard)	1700	800
News	1700	750
LWC	1700	800
SC	1700	750
Uncoated fine paper	1700	750
Coated fine paper	1700	800

* Only one of the marked processes must be used.

- Calculation of points by means of a calculation spreadsheet designed by Nordic Ecolabelling.

Energy points for a mixture of different pulp types

For a mixture of different pulp types, the following formulae are used for calculating the energy points, $P_{m(\text{electricity})}$ and $P_{m(\text{fuel})}$:

$$P_{m(\text{electricity})} = \sum_{i=1}^n P_{m(\text{electricity})i} \cdot m_i$$

and

$$P_{m(\text{fuel})} = \sum_{i=1}^n P_{m(\text{fuel})i} \cdot m_i$$

in which m_i is the proportion of the individual pulp in the total pulp mix, i.e. tonnes of individual pulp used per tonne of pulp. Due to wastage and differences in water content, the total of m_i may be greater than 1. $P_{m(\text{electricity})i}$ is the energy points for electricity for pulp number i , and $P_{m(\text{fuel})i}$ is the energy points for fuel for pulp number i .

- Calculation of points by means of a calculation spreadsheet designed by Nordic Ecolabelling.

Total energy points for paper and pulp production

The total points for both electricity and fuel consumption is calculated from the pulp and paper consumption points by weighting the reference values (X = weighting of reference value of pulp or paper production):

$$P_{el} = X_{El,m} \cdot P_{El,m} + X_{El,p} \cdot P_{El,p}$$

where

$$X_{el,m} = \frac{El_{reference,m}}{(El_{reference,m} + El_{reference,p})}$$

$$X_{el,p} = \frac{El_{reference,p}}{(El_{reference,m} + El_{reference,p})}$$

$$P_{fuel} = X_{Fuel,m} \cdot P_{Fuel,m} + X_{Fuel,p} \cdot P_{Fuel,p}$$

where

$$X_{Fuel,m} = \frac{Fuel_{reference,m}}{(Fuel_{reference,m} + Fuel_{reference,p})}$$

$$X_{Fuel,p} = \frac{Fuel_{reference,p}}{(Fuel_{reference,m} + Fuel_{reference,p})}$$

For a mixture of pulps, the reference values for electricity and fuel must be weighted by the proportion of pulp, mi, in the expressions for X.

- ☒ The calculation of points with part results must be shown in the documentation. It must be clearly stated what starting values were applied for use of fuel and electricity. A calculation spreadsheet designed by Nordic Ecolabelling must be used for the calculation.

2e.3 Energy calculation, pulp manufacturer

The energy points Pelectricity, mi and Pfuel, mi for production of a pulp i should be calculated according to the formulae below:

$$P_{m(electricity)i} = \frac{Electricity_{used}}{Electricity_{reference}}$$

and

$$P_{m(fuel)i} = \frac{(Fuel_{used} - 1.25 \cdot in-house generated electricity)}{Fuel_{reference}}$$

The values for Electricity_{reference} and Fuel_{reference} are taken from Table 2e.2 below.

Table 2e.2 Energy for pulp production

Processes	Fuel kWh/t Reference value	Electricity kWh/t Reference value
Bleached chemical pulp	3750	750
Dried, bleached chemical pulp	4750	750
Unbleached chemical pulp	3200	550
Dried, bleached chemical pulp	4500	550
CTMP	n.a.	2000
Dried CTMP	1000	2000
DIP	350	500
Dried DIP	1350	600
TMP	n.a.	2200
Dried TMP	1000	2200
Slip	n.a.	2000
Dried slip	1000	2000

- Calculation of points by means of a calculation spreadsheet designed by Nordic Ecolabelling.

2e.4 Heating value and steam table

Table 2e.4.1 Effective (lower) heating values for dry substance of fuel

Fuel	Heating value (lower)	Unit
Wood briquettes	10.0	GJ/m ³ loose
Wood pellets	10.0	GJ/m ³ loose
Wood powder	3.80	GJ/m ³ loose
Wood chips	3.55	GJ/m ³ loose
Saw dust	2.90	GJ/m ³ loose
Bark	2.22	GJ/m ³ loose
Lump peat	4.50	GJ/m ³ loose
Milled peat	3.75	GJ/m ³ loose
Sulphate lye	12.7	GJ/kg DS
Sulphite lye	14.7	GJ/kg DS
Tall oil pitch	36.8	GJ/m ³
Natural gas	38.9	MJ/m ³
Light fuel oil	36.0	GJ/m ³
Heavy fuel oil	38.7	GJ/m ³
LPG	46.1	MJ/kg
Coal	26.5	MJ/kg

Table 2e.4.2 Steam table

Enthalpy of measured steam, h'' as a function of absolute pressure, p or temperature, t . The enthalpy is divided by an efficiency rate of 0.9 and added to the heat consumption.

p Bar	t OC	h'' kJ/kg	p Bar	t OC	h'' kJ/kg
0.50	81.3	2646.0	16.0	201.4	2791.7
0.60	86.0	2653.6	17.0	204.3	2793.4
0.80	93.5	2665.8	18.0	207.1	2794.8
1.00	99.6	2675.4	19.0	209.8	2796.1
1.20	104.8	2683.4	20.0	212.4	2797.2
1.40	109.3	2690.3	22.0	217.2	2799.1
1.60	113.3	2696.2	24.0	221.8	2800.4
1.80	116.9	2701.5	26.0	226.0	2801.4
2.00	120.2	2706.3	28.0	230.1	2802.0
2.50	127.4	2716.4	30.0	233.0	2802.3
3.00	133.5	2724.7	32.0	237.5	2802.3
3.50	138.9	2731.6	34.0	240.9	2802.1
4.00	143.6	2737.6	36.0	244.1	2801.7
4.50	147.9	2742.9	38.0	247.3	2801.1
5.00	151.8	2747.5	40.0	250.3	2800.3
6.00	158.8	2755.5	45.0	257.4	2797.7
7.00	165.0	2762.0	50.0	263.9	2794.2
8.00	170.4	2767.5	55.0	269.9	2789.9
9.00	175.4	2772.1	60.0	275.6	2785.0
10.00	179.9	2776.2	65.0	280.8	2779.5
11.00	184.0	2779.7	70,0	285,8	2773,5
12.00	188.0	2782.7	80,0	295,0	2759,9
13.00	191.6	2785.4	90,0	303,3	2744,6
14.00	195.0	2787,8	100,0	311,0	2727,7
15.00	198.3	2789,9	110,0	318,1	2709,3

Source Thermal Engineering Data, referencing Schmidt, E.: *Properties of water and steam in SI.Units, 1969. Springer-Verlag and R. Oldenbourg 1969.*

1. All values are given in tonnes except for natural gas, where they are given in kg per normal cubic metre (kg/Nm³).
2. Natural gas in kg/Nm³.

Sources: Statistics Sweden: *Energy statistics 1995. SFT (Norwegian Environment Agency) Report 9513; Incineration plants. Guidance for project managers. SFT (Norwegian Environment Agency): Emission coefficients (Audun Rosland, 1997).*

2e.5 Energy content of damp fuel

Calculation of energy content of damp fuel

The effective heating value of damp fuel can be calculated with the following formula:

$$Q_{iw} = Q_{ik} * (100 - w)/100 - 2.45 * w/100,$$

where

Q_{iw} = lower heating value of damp fuel expressed in kJ/kg

Q_{ik} = lower heating value of dry substance expressed in kJ/kg

w = water content of damp fuel expressed as water percentage.

Calculation of energy content of wood chips

The energy content of wood chips depends primarily on the water content. The following explains how this can be calculated.

The energy content (lower heating value) of dry wood is stated as 19 MJ/kg.

Energy is required for evaporating the water normally present in wood. This energy demand reduces the wood's heating value. The formula for calculating the relationship between the energy content and the water content can be formulated as follows:

$$19 \text{ MJ} * (100 - \text{water \%}) / 100 - 2.45 * \text{water \%} / 100 = \text{xx MJ/kg}$$

It is necessary for the water content of the wood to be known.

Immediately after the tree is felled, the water content can be up to 55%. The water slowly evaporates from the wood, first during transport and then when it is cut up and seasoned for use in pulp production etc. During this period, the water content depends on the precipitation during the period. Normally, it will reduce to 20-40%.

For a 40% water content, the energy content can be calculated as:

$$19 \text{ MJ} * (100 - 40\%) / 100 - 2.45 * 40 / 100 = 10.4 \text{ MJ/kg}$$

For a 20% water content, the energy content can be calculated as:

$$J * (100 - 20\%) / 100 - 2.45 * 20 / 100 = 14.7 \text{ MJ/kg}$$

Form 3 Requirements applicable to chemical products (1/3)

The name and area of use of the chemical product/raw material:

Manufacturer/importer of the chemical product:

Classification of chemical products

Is the product classified in accordance with the following table? Yes No

Exceptions from the following classification may occur in the individual requirement.

Classification	Associated hazard symbol and R-phrases*	CLP-regulation 1272/2008*
Environmental hazard	N with R50, R50/53, R51/53 and/or R59	H400 very toxic to aquatic life H410 very toxic to aquatic life with long-lasting effects H411 toxic to aquatic life with long-lasting effects and/or EUH059 hazardous to the ozone layer
Highly toxic	Tx (T+ in Norway) with R26, R27, R28 and/or R39	H330 fatal to inhale H310 fatal in contact with skin H300 fatal if swallowed and/or H370 causes damage to organs
Toxic	T with R23, R24, R25, R39 and/or R48	H331 toxic if inhaled H311 toxic in contact with skin H301 toxic if swallowed H370 causes damage to organs and/or H372 causes damage to organs through prolonged or repeated exposure
Carcinogenic	T with R45 or R49. Or Xn with R40	H350 may cause cancer H350i may cause cancer by inhalation Or H351 suspected to cause cancer
Mutagenic	T with R46 or Xn with R68	H340 may cause genetic defects H341 suspected to causing genetic defects
Toxic for reproduction	T with R60 and/or R61. Or Xn with R62 and/or R63	H360F may damage fertility and/or H360D may damage the unborn child H361f suspected to damaging fertility and/or H361d suspected to damaging the unborn child

The classification applies in accordance with the Dangerous Substances Directive 67/548/EEC with subsequent amendments and adaptations and/or the CLP regulation 1272/2008 with subsequent amendments. During a transition period, until 1st June 2015 both types of classification can be used. After the transition period only classification according to the CLP-regulation applies, see above table.

Please note that the producer is responsible for correct classification.

Product safety data sheet/data sheet in accordance with current legislation in the country of application, eg Appendix II to REACH (1907/2006/EC) for each.

Formaldehyde

Does the chemical product contain free formaldehyde? Yes No

If yes, specify content in weight-% _____

Is the product glue with new produced polymeric?

Yes No

Form 3 The content and additives to chemical products and materials (2/3)

This appendix is completed and signed by the chemical supplier based to the best of his/her knowledge at the time of the application, also based on information from raw material manufacturers, recipe and available knowledge on the chemical product with reservations for new advances and new knowledge. Should such new knowledge arise, the undersigned is obliged to submit an updated declaration to Nordic Ecolabelling.

The declaration applies to all constituent substances.

Constituent substances are all substances in the product, including additives (e.g. pigments) in the ingredients, but not pollutants from the production incl. production of raw materials. Pollutants are traces from production incl. production of raw material present in the finished product in concentrations of less than 100 ppm (0.01 weight-%, 100 mg/kg), but not products that have been added to a raw material or product deliberately and for a purpose, irrespective of quantity. Note that the product must at all times meet all mandatory requirements – an exemption provided for in a specific requirement will accordingly not constitute a general exemption from the mandatory requirements.

Does the product contain any of the following?:

Halogenated organic binding agents? (Bronopol and CMIT is excluded from this, please refer to statement below) Yes No

Bronopol concentration exceeding 0.05% by weight? Yes No

Isothiazolin concentration exceeding 0.05 wt% or the mixture (3:1) Of CMIT/MIT (5 Chloro-2-methyl-4-isothiazolin-3-one Cas. No. 247-500-7, /2-methyl-4-isothiazolin-3-one Cas. No. 220-239-6) exceeding 0.0015 wt%? Yes No

Biocide chlorfenoler (their salts and esters) and dimethylfumerat? Yes No

PFOA, PFOS or compounds thereof? Yes No

Bisphenol A compounds? Yes No

Phthalates? Yes No

Azidirine and polyazidirine? Yes No

Carcinogenic (Carc 1A/1B), mutagenic (Mut 1A/1B/2) and reproduction (Repr 1A/1B) damaging compounds?
(Formaldehyde in adhesives/glue is excluded from this) Yes No

Pigments/additives based on lead, tin, cadmium, boron*, copper*, Chromium VI and mercury and their compounds? Yes No

Alkylphenoethoxysylates and other alkylphenol derivatives? Yes No

Volatile organic compounds**? Yes No

If yes, specify quantity in weight-% _____

Does the product contain aromatic solvents**? Yes No

If yes, specify quantity in weight-% _____

* Copper and boron should be permitted for preserving playground and park equipment left outdoors on a permanent basis (NTR class AB).

** Volatile organic compounds (VOC) are defined here as volatile organic compounds with an initial boiling point that is lower than or equal to 250 °C at 0.013 kPa. VOCs are volatile organic compounds with one or more benzene rings in the molecule.

Form 3 The content and additives to chemical products and materials (3/3)

Does the chemical product contain alkylphenols, alkylphenoethoxylates or other alkylphenol derivatives? Yes No
 If yes, specify quantity in weight-% _____

Alkylphenol derivatives are defined as substances that shed alkylphenols during degradation

Does the chemical product contain nano materials? Yes No

For wood preservatives and maintenance products:

Does the product contain biocides? Yes No

If yes, provide information on the bioaccumulability of the biocide in the form of BCF value or log KOW value: _____

Extra for wood care products

If the product can be used for impregnation according to the Nordic Wood Preservation Council's classification, which impregnation classes can it be used for? Yes No

Is active substances in the product based on arsenic, chromium, organic tin compounds or creosote oil? Yes No

Signature of producer:

Date	Company name
Signatory	Telephone

Form 4 Overview of R-phrases and associated names

Environmentally dangerous

R50: Very toxic to aquatic organisms

R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

R59: Dangerous for the ozone layer

H400: Very toxic to aquatic life

H410: Very toxic to aquatic life with long-lasting effects

H411: Toxic to aquatic life with long-lasting effects and/or EUH059 hazardous to the ozone layer

H412: Harmful to aquatic life with long-lasting effects

H413: May cause long-lasting effects to aquatic life

EUH 059: Hazardous to the ozone layer

Very toxic/toxic

R26: Very toxic by inhalation

R27: Very toxic in contact with skin

R28: Very toxic if swallowed

R39: Danger of very serious irreversible effects

R23: Toxic by inhalation

R24: Toxic in contact with skin

R25: Toxic if swallowed

R48: Danger of serious damage to health by prolonged exposure

H331: Toxic if inhaled

H311: Toxic in contact with skin

H301: Toxic if swallowed

Form 4 (continued) Overview of R-phrases and associated names

H330: Fatal if inhaled

H310: Fatal in contact with skin

H300: Fatal if swallowed

H370: Causes damage to organs

H372: Causes damage to organs

Carcinogenic

R33: Danger of cumulative effects

R40: Limited evidence of a carcinogenic effect

R45: May cause cancer

R49: May cause cancer by inhalation

R46: May cause heritable genetic damage

R60: May impair fertility

R61: May cause harm to the unborn child

R62: Possible risk of impaired fertility

R63: Possible risk of harm to the unborn child

R68: Possible risk of irreversible effects

H350: May cause cancer

H351: Suspected of causing cancer

H340: May cause genetic defects

H341: Suspected of causing genetic defects

H360: May damage fertility. May damage the unborn child

H361: Suspected of damaging fertility. Suspected of damaging the unborn child

Form 5 Calculation of energy consumption

Energy consumption, kWh/kg panel, must encompass the primary panel production and the production of the constituent key raw materials. Key raw materials are defined as raw materials that exceed 5% by weight of the finished product. Energy consumption during extraction of raw materials is not to be included.

The energy account for the panel production must be based on data from the handling of raw materials (incoming conveyor belt on the production line) to the finished product before surface treatment, if any. Energy consumption during surface treatment is not included.

In the case of the production of chemical products, for example adhesive, the energy accounts must be based on data for production. The energy content of the raw material must not be included in the calculation. In exceptional cases a standard value of 15 MJ/kg (solution for use) for adhesive may be used, broken down as 12 MJ/kg for fuel and 3 MJ/kg for electricity purchased from an outside supplier (4:1).

Nordic Ecolabelling uses the unit kWh per kg or m³ for energy. However, conversion to MJ (1kWh=3.6MJ) is also possible.

Purchased electricity is defined as electricity purchased from external suppliers. Electricity generated on the premises must be added to the fuel consumption. Fuels consumption includes both purchased fuel and fuel deriving from production waste.

If the producer has surplus energy and sells this surplus in the form of electricity, steam or heat, the quantity sold must be deducted from total consumption.

The energy content of fuel must be calculated from the data given in the table below. If electrical energy is produced on site the consumption of fuel can be calculated in one of the following ways:

- The actual consumption of fuel calculated on annual basis
- Consumption of on-site electrical energy is multiplied with 1.25

Form 5 (continued) Theoretical energy content and emission factors

Sources: Statistics Norway: Energy statistics 1995, SFT Report 9513: Incinerators. Guidance for case officers and SFT: Emission coefficients (Audun Rosland, 1987).

4.5.1 Energy sources	Theoretical energy content GJ/tons	Density ¹	Theoretical energy content MWh/m ³ ²	Energy content GJ/unit ³	Tons CO ₂ per ton energy raw material	Ton CO ₂ per m ³ ⁴	Ton CO ₂ per GJ
Coal (anthracite)	28.1	-	7.8	28.1	2.42	-	0.08612
Coke (from coal)	28.5	-	7.9	28.5	3.19	-	0.11193
Wood fuel	16.8	0.5	4.7	8.4	0	0	0
Waste liquor (non-volatile)	14	-	3.9	14	0	0	0
Wood waste (dry)	16.8	-	4.7	16.8	0	0	0
Crude oil	43	0.85	10.2	36.6	3.2	2.72	0.074
Natural gas	49.2	0.85	11.6	0.042	2.75	2.34	0.056
LPG	46.1	0.51	6.5	23.5	3	1.53	0.065
Petrol	43.9	0.74	9.0	32.5	3.13	2.32	0.071
Paraffin	43.1	0.79	9.5	34.0	3.15	2.49	0.073
Light fuel oil	43.1	0.84	10.1	36.2	3.17	2.66	0.074
Diesel	43.1	0.84	10.1	36.2	3.17	2.66	0.074
Marine gas oil	43.1	0.84	10.1	36.2	3.17	2.66	0.074
Heavy crude oil	40.6	0.97	10.9	39.4	3.2	3.10	0.079

¹ All figures in tonnes except for Wood Fuel, where figures are in tonnes per firm cubic meter (ton/fm³) and Natural Gas which is in kg per standard cubic meter (kg/Sm³).

² All figures in MWh/m³, except for Natural Gas which is given in kWh/Sm³ and Coal, Coke, Wood Fuel, Waste liquor and Waste wood which are given in MWh/ton.

³ All figures in GJ/m³ except for Coal, Coke, Waste liquor and Waste wood which are in GJ/ton, Natural Gas which is given in GJ/ton and Wood Fuel in GJ/fm³.

⁴ Natural Gas in kg/Sm³.

Example of a calculation using the standard value for adhesives:

A panel contains 12% adhesive (solution for use). This represents 0.12 kg of adhesive (solution for use per kilogram of panel. Applying the standard value in the calculation of energy points for adhesive results in:

0.12 kg adhesive/ kg panel x 15 MJ/ kg adhesive = 1.8 MJ/ kg panel.

Conversion to kWh per kg panel: (1.8 MJ/kg panel)/3.6 = 0.5 kWh/kg panel

Ratio (4:1) for fuel and el: 0.4 kWh fuel/kg panel and 0.1 kWh el/kg panel

Enter the values for electricity and fuel in the formula for calculating energy points (D and E) in chap. 1.3, Reg. R10 by adding the values to the values for the production of the panel.

(Reference value applies per kg of panel)

Form 6 Declaration of metals

Name of product: _____

Producer/supplier: _____

Can the metal parts be separated from the other materials without

the use of special tools? Yes No

Submit description of how this is done

Is the metal part plated with cadmium, chromium, nickel, zinc and their compounds? Yes No

The chrome plating process must be based on trivalent chromium and no hexavalent chromium must be used in any pre or post treatment processes. Chrome plating, nickel plating and zinc plating processes must use treatment processes, iron exchange processes and membrane processes or equivalent processes enabling chemical products to be reused insofar as this is possible.

Emissions from surface treatment processes must be re-used and destroyed. The system must be closed and without emissions, with the exception of zinc where the maximum emission must not exceed:

- Zink: 0.5 mg/l

Submit test results confirming compliance with the emission limits on chromium, chromium VI and nickel in PARCOM Recommendation 92/4 (Parcom/Oscom)

How large a proportion of the metal raw material consists of recycled material?

Aluminium: _____

Other metals (e.g. steel): _____

Attach: Report from the smelting plant documenting the proportion of recycled material.

The proportion of recycled material can be documented for the actual share or on an annual basis. If declared on an annual basis the melting plant, that supplies the aluminium / metal, shall declare the recycling rate. Recycled metal is defined here as both pre-consumer and post-consumer as defined by the ISO standard 14021.

Signature of producer of metal:

Date	Company name
Signatory	Telephone

Form 7 Plastics declaration

Name of product and chemical name of plastic material: _____

Producer/supplier: _____

1. Does the plastic material contain fillers and/or reinforcement? Yes No
If yes, state which types and in what quantities

2. Are plastic parts weighing more than 50 g labelled for recycling in accordance with ISO 11 469? Yes No

If no, state which equivalent standard has been used

3. Has the surface of the plastic part been coated? Yes No

4. How large a proportion of the plastic material is recycled/recovered material*?
_____ %

5. Does the recycled plastic contain halogenated flame retardant? (Pollution up to 100 ppm allowed) Yes No

* Recycled plastic is defined in the requirement according to ISO 14021 in the following two categories:

"Pre-consumer / commercial" is defined as material derived from the waste stream during a production process. The use of materials such as rework, regrind or scrap produced by a production process that can be recycled in the same process as the material was created, is not considered as recycled pre-consumed material. Nordic Ecolabelling defines rework, regrind or scrap, which cannot be reused directly in the same process, but which requires reprocessing (for example in the form of sorting, re-melting and granulating) before it can be used again, to be pre-consumed / commercial material. Whether this happens internally or externally. "Post-Consumed / Commercial" is defined as material generated by households or by commercial, industrial and institutional facilities in the role of end-user of a product that can no longer be used for its purpose. This includes material from the distribution line.

Attach documentation on the origin of the recovered plastic.

Signature of producer:

Date	Company name
Signatory	Telephone

Form 8 Revised requirement for wood raw material

The following text includes “wood raw material” all the raw materials of wood, willow and bamboo.

A) Tree species that may not be used in Nordic Swan Ecolabelled Outdoor furniture, playground equipment and outdoor fixtures

Species of trees on the Nordic Ecolabel list of protected tree species* may not be used in Nordic Swan Ecolabelled Outdoor furniture, playground equipment and outdoor fixtures.

*The complete list of protected tree species is available for viewing at: www.nordic-ecolabel.org/wood/

The requirement only applies to virgin wood species and not wood species defined as recycled material (see definition of recycled material in requirement B below).

- Declaration from applicant/manufacturer/supplier that the requirement to wood species not permitted to be used in Nordic Swan Ecolabelled Outdoor furniture, playground equipment and outdoor fixtures are met. Form 10 may be used.

B) Wood raw material

The applicant must state the name (species name in Latin, Scandinavian or English language) of the wood raw material used in the Nordic Swan Ecolabelled Outdoor furniture, playground equipment and outdoor fixtures.

Chain of Custody certification

Applicant, manufacturer or wood material supplier of the applicant must have Chain of Custody certification under the FSC/PEFC schemes.

Subcontractors (e.g. a carpentry) who does not have a chain of custody certification can in certain cases be exempted from the above requirement. The premise is that the subcontractor can guarantee that the specific wood raw material is purchased from a FSC/PEFC Chain for Custody certified supplier, and that the wood material fulfils the Swan requirements.

*Manufacturer / supplier who uses only recycled material in the Nordic Ecoabelled outdoor furniture, playground equipment and outdoor fixtures, are exempted from the requirement for Chain of custody certification. Definition of recycled material according to ISO 14021, see definition below**

Certified wood raw material

On an annual basis;

A minimum of 70% of the wood raw material used in Nordic Swan Ecolabelled product must be certified as sustainably forested under the FSC or PEFC schemes or be recycled material.

The remaining percentage of wood raw materials must be FSC Controlled Wood or wood from PEFC Controlled Sources.

If the producer is Chain of Custody certified under the FSC/PEFC schemes the certified wood raw materials (FSC and PEFC) must be accounted/recorded from the manufacturer's Chain of Custody account to the Nordic Swan Ecolabelled product/production line.

**Definition of pre-consumer material: Material diverted from the waste stream during a manufacturing process. Excluded is reutilization of materials such as rework, regrind or scrap generated in a process and capable of being reclaimed within the same process that generated it.*

Definiton of post-consumer material: Material generated by households or by commercial, industrial and institutional facilities in their role as end-users of the product which can no longer be used for its intended purpose. This includes returns of material from the distribution chain.

Nordic Ecolabelling defines byproducts from primary wood industries (sawdust, wood chips, bark ect.) or residues from forestry (bark, branches, roots etc.) as recycled material.

- ☒ Name (species name in Latin, Scandinavian or English language) of the wood raw materials that are used in Nordic Swan Ecolabelled product. Form 2a may be used.
- ☒ Applicant/manufacturer are required to present a valid FSC/PEFC Chain of Custody certificate that covers all wood raw materials used in Nordic Swan Ecolabelled outdoor furniture, playground equipment and outdoor fixtures.
- ☒ Manufacturer, which is Chain of Custody certified under the FSC/PEFC schemes must submit documentation showing that the requirement to the percentage of certified wood or recycled material are met by the manufactures Chain of custody account.
- ☒ In cases where the applicant does not have FSC/PEFC Chain of Custody certified supplier, the supplier must present; an invoices for the specific wood, documentation showing that the wood supplier is FSC/PEFC Chain of Custody certified together with the suppliers Chain of Custody certificated. The Chain of Custody certificate has to comply with the data on the invoice. The volume of purchased certified wood raw material must appear on the invoice. The applicants must have an agreement with the wood supplier, which describes how the supplier guarantees that the delivered certified wood matches the information on the invoice. The agreement shall also specify that the wood supplier is required to notify the applicant if the wood supplier is replaced. Nordic Ecolabelling may request further information.

Form 9 Revised requirement for woodbased panels

The following text includes “wood raw material” all the raw materials of wood, willow and bamboo.

A) Tree species that may not be used in Nordic Swan Ecolabelled outdoor furniture, playground equipment and outdoor fixtures

Species of trees on the Nordic Ecolabel list of protected tree species* may not be used in Nordic Swan Ecolabelled Outdoor furniture, playground equipment and outdoor fixtures.

* The complete list of protected tree species is available for viewing at:

www.nordic-ecolabel.org/wood/

The requirement only applies to virgin wood species and not wood species defined as recycled material (see definition of recycled material in requirement B below).

- Declaration from applicant/manufacturer/supplier that the requirement to wood species not permitted to be used in Nordic Swan Ecolabelled Outdoor furniture, playground equipment and outdoor fixtures are met. Form 10 may be used.

B) Wood raw material

The applicant/panel manufacturer must state the name (species name in Latin, Scandinavian or English language) of the wood raw material used in panels in the Nordic Swan Ecolabelled Outdoor furniture, playground equipment and outdoor fixtures.

Chain of Custody certification

The panel manufacturer must have a Chain of Custody certification under the FSC/PEFC schemes.

Manufacturer/supplier who uses only recycled material in panels in the Nordic Swan Ecolabelled outdoor furniture, playground equipment and outdoor fixtures, are exempted from the requirement for Chain of Custody certification. Definition of recycled material according to ISO 14021, see definition below*

Certified wood raw material

On an annual basis;

A minimum of 70% of the wood raw material in panels used in Nordic Swan Ecolabelled product must be certified as sustainably forested under the FSC or PEFC schemes or be recycled material.

The remaining percentage of wood raw materials must be FSC Controlled Wood or wood from PEFC Controlled Sources or recycled material.

The certified wood raw materials (FSC and PEFC) must be accounted/recorded from the panel manufacturer's Chain of Custody account to the Nordic Swan Ecolabelled product/production line.

* *Definition of pre-consumer material: Material diverted from the waste stream during a manufacturing process. Excluded is reutilization of materials such as rework, regrind or scrap generated in a process and capable of being reclaimed within the same process that generated it.*

Definition of post-consumer material: Material generated by households or by commercial, industrial and institutional facilities in their role as end-users of the product, which can no longer be used for its intended purpose. This includes returns of material from the distribution chain.

Nordic Ecolabelling defines byproducts from primary wood industries (sawdust, wood chips, bark ect.) or residues from forestry (bark, branches, roots etc.) as recycled material.

If the panel are Nordic Swan Ecolabelled the requirement are met.

- Name (species name in Latin, Scandinavian or English language) of the wood raw materials that are used in Nordic Swan Ecolabelled product. Form 2a may be used.
- The panel manufacturer are required to submit a valid FSC/PEFC Chain of Custody certificate that covers all wood raw materials used in panel in the Nordic Ecolabelled outdoor furniture, playground equipment and outdoor fixtures.
- Manufacturer, which is Chain of Custody certified under the FSC/PEFC schemes must submit documentation showing that the requirement to the percentage of certified wood or recycled material are met by the manufactures Chain of custody account (Panel manufactures using only recycled material are exempted from this documentation requirement).
- Invoice from the panel manufacturer showing that the requirement to the percentage of certified wood or recycled material are met.

Form 10 Declaration of tree species not permitted to be used in Nordic Swan Ecolabelled products

Applicant/supplier:
Productgroup/type:
Version and date of the list of prohibited tree species used:

It is hereby declared that species of trees on the Nordic Ecolabel list of protected tree species* are not used in Nordic Swan Ecolabelled outdoor furniture, playground equipment and outdoor fixtures. The complete list of protected tree species is available for viewing at: www.nordic-ecolabel.org/wood/

Nordic Ecolabelling may request further information if in doubt about specific tree species. The requirement only applies to virgin wood species and not tree species defined as recycled wood*.

** Definition of pre-consumer material: Material diverted from the waste stream during a manufacturing process. Excluded is reutilization of materials such as rework, regrind or scrap generated in a process and capable of being reclaimed within the same process that generated it.*

Definition of post-consumer material: Material generated by households or by commercial, industrial and institutional facilities in their role as end-users of the product which can no longer be used for its intended purpose. This includes returns of material from the distribution chain.

Nordic Ecolabelling defines byproducts from primary wood industries (sawdust, wood chips, bark ect.) or residues from forestry (bark, branches, roots etc.) as recycled material.

Applicant/Manufacturer of the solid fuels signature

Place and date:	Company name/stamp:
Responsible person:	Signature of responsible person: